

K THE 94k.  
Beauties of the Creation;  
OR, A NEW  
MORAL SYSTEM  
OF  
NATURAL HISTORY;

DISPLAYED IN THE

Most singular, curious, and beautiful,

QUADRUPEDS, BIRDS,  
INSECTS, TREES, and FLOWERS:

Designed to inspire Youth with Humanity towards the  
Brute Creation, and bring them early acquainted with  
the wonderful Works of the Divine Creator.

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*"The poor Beetle, crush'd beneath the Foot, feels a Pang as  
"great as when a Monarch falls!"* SHAK.

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VOLUME II.

---

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# EXPLANATION OF SCIENTIFIC TERMS.

OCCURRING

## IN THE FOLLOWING SUBJECTS OF NATURAL HISTORY.

*Abdomen*, the belly.

*Aurelia*, the state of the Insect, while changing from the  
Worm to the Moth, Fly, or Butterfly.

*Apterous*, without wings.

*Antennæ*, horns or feelers.

*Cbrysalis*, the same as *Aurelia*.

*Crustaceous*, covered with a shell, or a substance similar to  
a shell.

*Capitulum*, a little head.

*Elytra*, the cases of the wings.

*Forceps*, the forked tail of an insect.

*Genus*, several beings agreeing in one common character.

*Hymenoptera Insecta*, insects having four membranous  
wings.

*Individual*.

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*Genus*, several beings agreeing in one common character.

*Hymenoptera Insecta*, insects having four membranous  
wings.

*Individual*,



*Individual*, a being considered separately from others of the same species or kind.

*Larva*, the Worm or Caterpillar.

*Lobe*, a division or distinct part.

*Lepidoptera Insecta*, insects having four wings.

*Membranous*, consisting of a fibrous web.

*Maxilla*, the jaws.

*Nympha*, see *Aurelia*.

*Neuroptera Insecta*, insects with four transparent wings.

*Palpi*, spiral tongues.

*Prorected*, stretched out.

*Reticulated*, formed like net-work.

*Scarabæus*, the Beetle.

*Setaceous*, covered with bristles.

*Species*, a common nature, by which several individuals are distinguished.

*Spine*, a thorn.

*Thorax*, the breast.

*Vermicula*, the nature of the insect before it begins its transformation.



# NATURAL HISTORY.

---

## I N S E C T S.

### THEIR GENERAL NATURE.

#### I N T R O D U C T I O N.

**D**EFINITION.---Insects are small animals, breathing through vent-holes, arranged along their sides, and provided with a skin, of a bony nature. Their body is composed of a head, trunk, limbs, and abdomen.

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B

FORM

## NATURAL HISTORY.

FORM AND STRUCTURE.---Not having occasion to fly far, they are not made so sharp before as birds : but their wings have sufficient strength and activity to conquer all the resistance they meet with, in their short passages through the air. Having neither bones, flesh, nor skin, as in other animals, they are covered with a curious coat of mail, which both guards and strengthens the body, while it renders the Insect more adapted to the purposes of seeking its food, and performing every other function of its being.

EYES AND ANTENNÆ.---The eyes of the Fly-tribes are two little crescents, or immovable caps, round the head of the Insect ; and contain a great number of minute eyes, crossing each other in the form of lattice-work. Curious observers relate they have counted several thousands in each combination. Lewenhoeck calculated as many as 8000. The cause of their eyes being so numerous, is to supply the defect of vision arising from their eyes being immovable. Thus Insects have eyes in every direction. How admirable must their sight be, which enables them to discern objects, with their innumerable

merable quantity of eyes, with as little confusion as other animals do with only two! Their antennæ are small horns, projecting from their head, in such a manner as to preserve the sight of so many fixed eyes from being injured.

MOTION.---The admirable mechanism in those that creep, the curious oars of those that swim, the incomparably formed feet of those that walk, the strength and elastic force of those that leap, and the talons of those that dig, afford the most ample matter for contemplating the endless wisdom of the Creator. Each is particularly adapted to the kind of motion peculiar to the respective Insect; which is exemplified in the Grasshopper, Water-Beetles, Crickets, &c. To render their progress through the air as easy as possible, Insects are provided with wings, formed of the lightest membranes, and the finest articulations. To poise the body, some have four wings; while such as have only two, have pointels, or poises, under each wing.

PARTS.---Insects are composed of joints, muscles, tendons, and nerves; with eyes, brain, stomach, entrails;

and with every other part of an animal body. How is the mind absorbed in wonder, when it considers that the smallest Animalcula, which the microscope can only render visible, is possessed of all the above-related parts ! May we not, therefore, say with Galen, when such exquisite workmanship appears in the minutest Insect, What must be the wisdom employed by the Almighty in forming the more noble parts of the Creation ?

SAGACITY.---Whether by instinct, or actual sagacity, Insects are secured against winter, our admiration is equally raised. When cold and wet oblige them to retire, some entomb themselves, as in their Aurelia, or Chrysalis state ; others provide themselves in summer with sufficient provisions for their winter subsistence ; and some of the Insect-tribe exist in a sleeping state, without changing their nature, or being under the necessity of requiring that food which is denied them by the change of season. This caused Solomon most wisely to say, “ Go to the Ant, thou Sluggard, consider her ways, and be wise ; which, having no guide, overseer, or ruler, provideth her meat in the summer, and gathereth her food in the harvest.”

CARE

## NATURAL HISTORY. 5

CARE OF THEIR YOUNG.---Insects, with the greatest care and affection, carry their young in their mouths, which is particularly observed in the Ant tribe. But their care, in general, deserves the greatest admiration. They deposit their eggs in such places as secure, produce, and subsist their offspring. According to the species, their eggs are laid in waters, on woods, or on vegetables, where the young find a subsistence agreeable to their nature. Particular woods, herbs, and plants, are chosen by the parent-insect to foster their future offspring. Thus Nettles, Ragwort, Cabbage-leaves, Oak-leaves, Currant and Gooseberry bushes, &c. have their peculiar Insects. Some, whose eggs requiring more warmth, deposit them in the hair of animals, the feathers of birds, and even in the scales of fishes. Others make their nests by perforating earth and wood, where they deposit their eggs with such neatness as to gratify the most curious observer. And, to prevent their eggs being injured, they inclose them in the leaves of vegetables, curiously glued together.



## 6 NATURAL HISTORY.

**FOOD.**---Every species of Insect has a food peculiar to itself. Caterpillars, for instance, are not only limited to herbage, but, likewise, to a peculiar kind. Sooner than disobey this ordinance of Nature, they will perish with hunger, unless they meet with a plant similar to that to which they are attached. To this general rule, we admit there are some few exceptions in Caterpillars that will subsist on any vegetable. This seems to be wisely regulated, in order to prevent the most useful parts of vegetation being destroyed by Caterpillars feeding, for instance, on Apple-trees only.

**USE.**---Let no person consider the Insect part of the Creation, as only worthy to be crushed to death by the foot, or to be made the cruel sport of thoughtless childhood: for, in the words of the ingenious and immortal Shakespear, "The poor Beetle, crush'd beneath the foot, feels a pang as great as when a Monarch falls." Surely their weakness ought to be their surest protection against such treatment. But, when it is considered that we derive the greatest embellishments, and medicinal aids, from their virtue, self-interest, if not gratitude, should protect



protect their defenceless lives from being destroyed by Man. To them we are indebted for our silk, honey, cochineal, and several medicines that are indispensably necessary to preserve our lives from being the prey of maladies that might, otherwise, prove incurable. Added to this, Caterpillars are indispensable food for birds, in their infancy, which have then their cries heard and relieved by the Creator, producing this subsistence, so admirably adapted to their tender texture. But sometimes it must be allowed, that the Almighty punishes the ingratitude of Man, by sending hosts of Flies, Locusts, and Caterpillars, in array against him. This should teach us not to despise even a worm, which has been too frequently rendered one of our most powerful and dreadful enemies. Let us not think ourselves rich, great, or independent, while the Almighty can punish our presumption with so inconsiderable an instrument.

TOMBS.---The Caterpillar, satiated with verdure, retires voluntarily from life, and seeks the grave. Previous to their retreat, they change their skins, cease to feed, while they build themselves a tomb, or sepulchre. A few

## 8 NATURAL HISTORY.

days conduct some of them into a new state, of superior existence. Instead of crawling the earth, they wing the air. The intermediate state between the Worm and the Fly, and which is so striking a picture of dissolution, is called the Chrysalis state. What appears the tomb of the Worm, is the embryo of the Butterfly; which, here acquiring a perfect form, bursts the barriers of the grave, and speeds its flight into another world of enjoyment. What a contrast of being is there between its last and former state! The Caterpillar is terrestrial, and crawls heavily along the ground. The Butterfly is agility itself, and seems almost to disdain reposing on the earth, from whence it derived its being. The first is shaggy, and of hideous aspect; the latter is arranged in the greatest splendor and beauty of glowing colours. The former was obliged to confine itself to a gross food; but this imbibes the essence of flowers, regales on dews and honey; and perpetually varies its pleasure, in the full enjoyment of Nature, which it most delightfully embellishes.

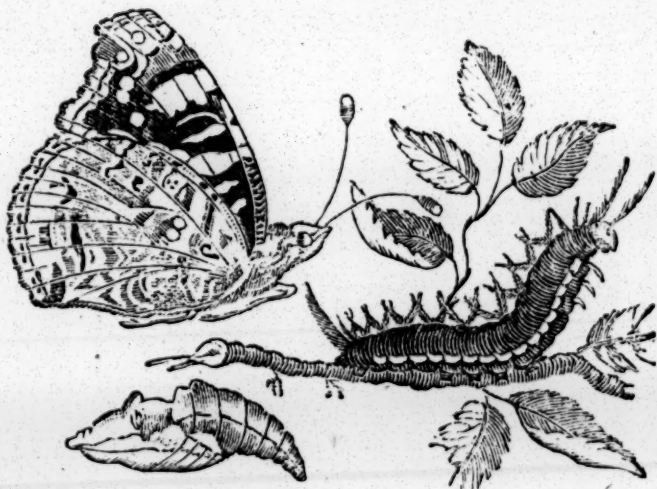
A collection of these beautiful and variegated Insects is a splendid spectacle, where the richest and most diversified

fified colours delight and astonish the eye with their shade and disposition. The sight alone enraptures. But, what a sublimity of reflection they afford to the Contemplator of Nature! The period of the Caterpillar's reptile existence being accomplished, it entombs itself, for the purpose of rising again a superior being. The Chrysalis is, at once, the tomb of the Caterpillar, and the cradle of the Butterfly. Under a transparent veil, this miracle of Nature is effected; from whence, like the sons of Man rising from the tomb at the day of resurrection, the Butterfly breaks the barriers of its grave, and wafts itself into the air of heaven. Here it enjoys the effulgence of light, and respires the breeze, embalmed with the sweets of Nature. Successful in his rising every nectareous flower, his rest is the harbinger of enjoyment. His airy wings convey him from pleasure to pleasure, while they captivate Man with their beauteous and variegated splendor. And in this revelling from essence to essence, he is not to be caught but by a small net of gauze, or silk, upon a wire, placed at the end of a light wooden handle.

What a scene of wonders does not the Butterfly display ! Its eyes of net-work ; its wings besprinkled with a farinaceous dust, of which every grain is a tile laid over a fine net of gauze ; and the infinite variety of form, colour, richness, and beauty, of its embellishments, render it so wonderful, that the Ladies of China are said to spend their whole lives in the study of this incomparable Insect. They inclose, in a box filled with small sticks, a number of Caterpillars, ready to spin their bag ; and when they hear the fluttering of the Butterfly's wings, they release them into a glazed apartment, filled with flowers. We have also, in England, Ladies distinguished by their taste and knowledge in Natural History. May their amiable example, and our respectful attention, banish the modern attachment to fashion and frivolity !

In order to give our Young Readers as clear an idea of Insects, in their Worm and Caterpillar state, as the limits of our plan will allow, we have selected six subjects, as the most beautiful and curious we could find, in Dr. Lister's Latin Treatise on this part of Animal Nature, in the Vermicular or Worm part of their being.

THE



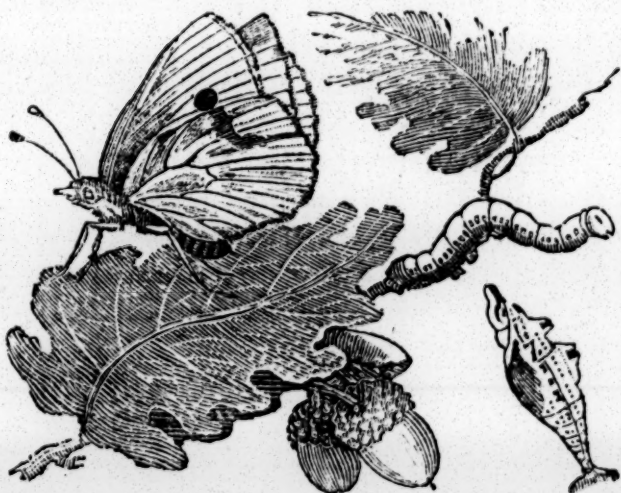
## THE AMERICAN EMPEROR.

THE ingenious Mr. Lister says that, after he had supplied this Caterpillar with various kinds of herbs, which it was tired of eating, he has placed before it some Nettles; supposing it might be pleased with a different kind of food. He saw, with great admiration, that the Insect became so joyous as to seem, by its motion, to congratulate

tulate itself on such a repast being set before it. But, such was the avidity with which the Nettles were eaten, that not any remained of them in a very short time. Having thus nourished itself for a few days, it began in October to prepare for transformation. Being then put under a glass, the Insect affixed itself to the centre, and thus hung suspended. Having attained the state of transformation, it so strongly moved itself, and struck the glass with such force, as even to cause the vibration of the noise to last while forty was counted. On the 12th of December, the same Author observes, that a perfect Insect was produced, which was exceedingly beautiful, and resembled in variety of colours the Peacock. It lived 40 days; in which time he says that he knew not any food on which it subsisted.







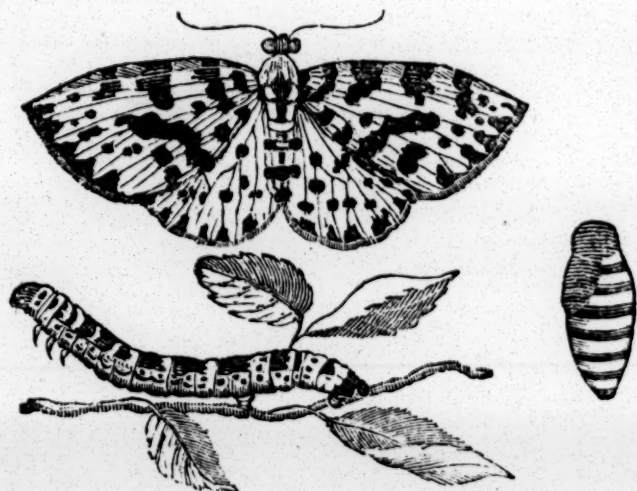
## THE GREEN MARBLED BUTTERFLY.

WHEN the Coleworts and Cauliflowers begin to heart, the perfect Insect of this Caterpillar is chiefly found depositing her eggs upon the leaves. The heat of the sun soon vivifies the eggs, and brings forth the said Caterpillars, which immediately begin to consume the vegetables above mentioned. They bear the heat of the sun



very easily : but they cannot endure long rains, and frequent showers ; for in such weather they waste so fast as, in a very short time, to have no more remaining of their being, but the skin. This Worm begins to purge itself, and prepare for its transformation, about the 3d of August ; and on the 17th of the same month the Butterfly is produced. This perfect Insect is very inactive, and slow in its motion. It however generally exists during the winter ; and sometimes it has been found alive when the spring has been far advanced.



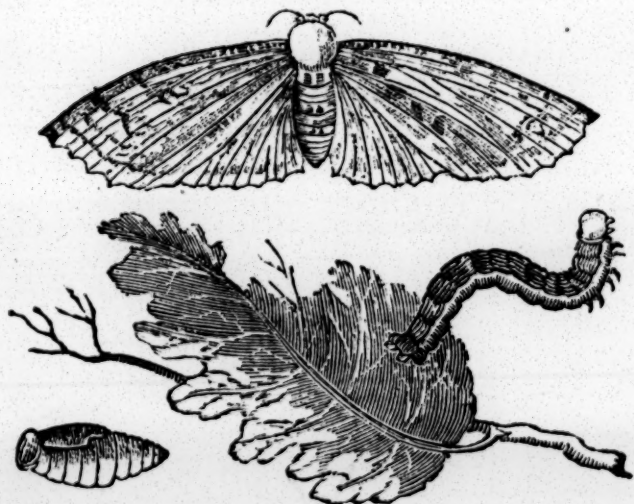


## THE YELLOW UNDER-WINGED MOTH.

THIS kind of Insect is of all the most difficult to be obtained. Lister sought in vain, a considerable time, to find in what place and manner it deposited the eggs. After many trials and enquiries, he placed one upon a leaf, which he had no sooner done, than it began to cover itself with a woolly substance, seemingly as a pre-

servation against wet or cold. The leaf being in a little time opened, he found a green seed: and he found that the Insect fed on gooseberry-leaves, or curling vines; and also the leaves of white, black, and red currants. It began about the end of June to prepare for its state of transformation, in which it remained until the 13th of July, when a Butterfly, spotted with black and white, sprung forth, to enjoy its new state of perfect being. When touched, or suffered to fall, it remained so motionless as to appear entirely dead.





## THE NUT-TREE MOTH.

THIS Worm, or Caterpillar, delights in Rose-leaves; but they are not so ravenous as others; for they have long intervals between their meals. They seldom change their leaf until it is entirely consumed. Their colour is very elegant. The upper part of the body is of a beautiful yellow. But they are not so beautiful after, as before feeding;

feeding ; for their skin is so thin as to be tinged by the colour of whatever food they eat. Before it disposes itself for transformation, the body assumes a red colour. This Insect was found to commence its Aurelian state about the beginning of June ; and on the 5th of December a perfect Insect was brought forth, as above delineated.





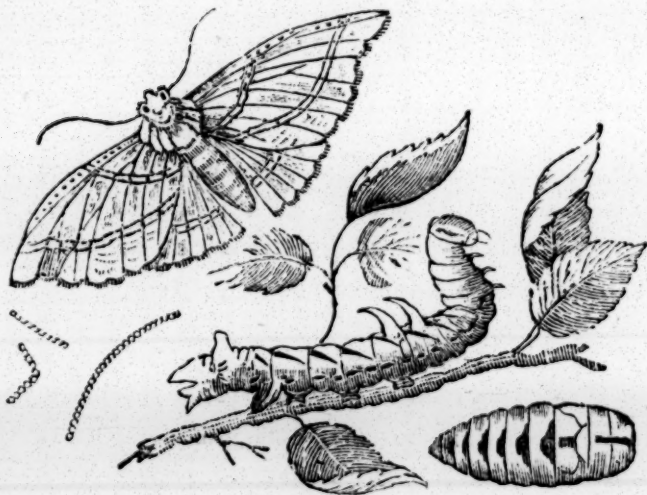
## THE TIGER MOTH.

THESE Caterpillars feed on the leaves of red Roses, and red Gooseberry-bushes. Some have their feet in the middle of their body, and others at the extremities. When they change place from one situation to another, they ascend by attaching themselves to the bough, with their feet, by which they raise the body like a serpent, and

and, thus, gain their desired situation. They hold themselves so fast by their feet that they can scarcely be taken from the part to which they adhere. They prepare for transformation by cleaning their bodies ; which being done, they commence their Chrysalid state about the 1st of April, and on the 24th of July the perfect Insect is produced.







*The name of this Caterpillar, in Greek, is*

P H O B E R A N.

**T**HIS Caterpillar is found near a village called Groed, in Flanders. It is generally seen sitting on a branch of Willow, in the form we have described it. It feeds on the leaves of the same tree. It eats very leisurely, and, when satisfied, it forms itself as we have represented.

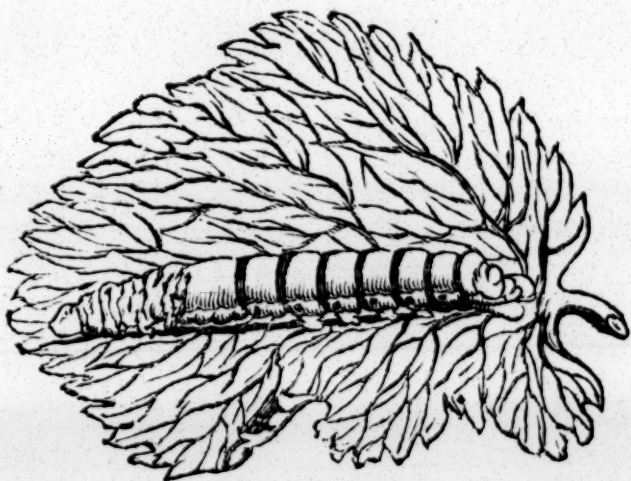
The

The hinder part of the body resembles the beard, face, and head of a Goat. When you take it, it strikes as if in the greatest anger. It has two hooks on the back, with which it guards and preserves itself from the attacks of other creatures. It is therefore called by Lister, the Phoberan. When it eats, the head appears tied to the body, with a slight thread, or filament, not unlike the joining of the head and body of a Spider.

On the 1st of September, it resigns itself to its approaching transformation. Twenty-two days after, appears a beautiful Butterfly, distinguished for its beauty and variety of colours. Before the perfect Insect, it deposits its eggs, which are coloured with different green hues.



SERICARIA.



## SERICARIA.---THE SILK WORM.

**W**ITHOUT entering into the description of a Naturalist of this Worm, we shall confine ourselves to that which we think will be more useful, pleasing, and interesting. It being more an object of universal service, than of singular beauty, induces us to prefer giving an account of its utility, than any elaborate account of its figure, or colour.

Where

Where these Worms are bred, they no sooner leave the eggs than they are fed with Mulberry-leaves, with which they are supplied every morning, when the old leaves are carefully removed. This Insect, when first produced, is extremely small, and entirely black. In a few days it assumes a new habit; which is white, tinged with the colour of its food. And before it goes into its Chrysalid state, it assumes two other dresses. At this time, it appears disgusted with the world, and voluntarily retires to its solitary grave, which is most admirably formed with its thread. How wonderful must be the structure of its body, to furnish such a thread; and how astonishing the instinct which teaches it to make, of this self-produced material, its own tomb! And how must it diminish the pride of Man, to consider that he is indebted, for his most gaudy array, to a substance, of which a Worm forms its sepulchre! Reflect on this, ye Potentates of the Earth; and acknowledge, with humble gratitude, your debt to the Silkworm; and divest yourselves of the vain arrogance you assume when arrayed in the robes of majesty!

When

When the Chrysalid state begins, the Insect proceeds to spin its silk, in which it is buried. Like the pierced iron plates of a wire-drawer, this Worm produces the thread through a pair of holes in an instrument placed under its mouth. Two drops of gum serve it as distaffs, supplying the substance of which she spins the thread; for the gum is no sooner in the air, than it loses its fluidity, and changes to the silk, in the due size of which the Worm is never deceived. She always proportions the thread to the weight of her body. The cone of silk being formed, and opened, is found to consist of the Worm, changed to a Nymph, and buried in its centre, a down or flue, which is the bad part of the silk, and the perfect part, all ranged with great compactness and propriety. It may be a matter of wonder how so small a Moth as this little Worm must necessarily produce, should be able to burst the million-fold barriers of her place of regeneration.

The same Omniscient Being who taught it how to erect this place of rest, taught it, at the same time, to find an easy access to her aerial existence. The new  
Animal,

Animal, with its horns, head, and feet, directs its efforts to that end of the cone it has left purposely light enough to admit its passage to another world of enjoyment.

By calculation, one of these Worms will produce between nine hundred and a thousand feet of silk at one spinning: and so thin and light is its texture, that the whole weighs no more than  $2\frac{1}{2}$  grains. And as they were particularly formed to furnish Mankind with a substance for drefs, that might render us more agreeable to each other, and thus enhance the few pleasures of our existence, Nature has caused one Fly to lay as many as 500 eggs. How grateful, then, we ought to be to the Creator, who, thus, forms, yearly, such an infinity of these manufacturers of the most agreeable and beautiful substance the world affords, for our array and embellishment! By this Worm, grandeur is more ennobled, and even royalty itself is rendered more majestic.



## THE FIRST ORDER.

*Insects with Crustaceous Elytra covering the Wings.*

---

## GENUS I.

## SCARABÆUS.---THE BEETLE.

ALL Insects having wings covered with the elytra, or cases of the wings, were usually called in Latin, Scarabæus; until Linnæus discriminated them, and confined the term to particular Beetles, distinguished by the horns on their head, and thorax or breast.

THE



28 THE STAG, AND GOLDEN BEETLE.



SCARA-

## SCARABÆUS AURATUS.

## THE GOLDEN BEETLE.

(See the smaller Insect, page 28.)

THE larva, or grub, of this Insect, injures the roots of trees and plants. The Beetle is found upon flowers, and particularly upon the Rose and Piony. The whole is a burnished green, and tinged with red, so as to resemble the finest polished copper. The elytra are adorned with a few transversal spots, which add to the other embellishments of its brilliant colouring. Such is its amazing splendor, that it rivals the emerald, and is, therefore, admired as the most beautiful Insect produced in England.

We avoid describing the Cockchafer, which, being so well known, only requires us just to mention, that all its varieties depend on its mode of life; and its colours, on its sex, age, health, sickness, &c.

LUCANUS.

## GENUS II.

## LUCANUS.---THE STAG BEETLE.

THE Stag Beetle is the largest, and most singular in its shape, of any in this country. It is known by two maxillæ, projecting from its head, and resembling the horns of a Stag. These maxillæ are furnished with teeth, from their root to their point. The elytra have neither streaks or spots. The whole Insect is of a deep brown. It is sometimes found in oaks, near London, where it is much smaller than those of the same species found in woody countries. As their horns pinch severely, they are carefully to be avoided. The greatest beauty they possess is their maxillæ, or jaws, sometimes appearing like coral.

The Lucani feed on the oozings from Oaks, where the females deposit their eggs. The larvæ, or grubs, lodge under the bark, or in the hollow of old trees; which they bite, and reduce to fine powder. Here they transform themselves into Chrysalids. These Insects are mostly found in Kent and Suffex.

The use of their porrected maxillæ, or jaws, is to loosen the bark to which they affix themselves, while they suck the juices oozing from the tree.

GENU

## GENUS III.

## DERMESTIDES.

*Characteristics.*

THE antennæ, or horns, end in a head of an oval form; the thorax, or breast, is of a convex form; and the head is so bent as to lie almost concealed under the thorax.

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## DERMESTIS VIOLACEUS.

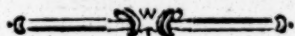
## THE VIOLET BEETLE.\*

THIS Insect is exceedingly beautiful, and is much smaller than, though nearly resembling, the Stag Beetle. The elytra are of a deep violet; the thorax, or breast, is covered with green hairs, and the legs are black. The whole creature, glittering with its brilliancy, charms its observer. The larva and the perfect insect being found in  
dead

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\* For a specimen of this Insect, see letter a, on the Plate of Flowers which contains the Foxglove and Heart's-ease.

dead bodies, evince that the Creator has power to produce the most beautiful effects from the most disagreeable of mediums. How different is this from human ability! With the choicest of Nature's productions combined to almost infinity, Man is not able to imitate the splendor of this Insect, which is produced by the Almighty, from a dead and putrid body.



## GENUS VII.

## BYRRHUS SCROPHULARIÆ.

## THE NETTLE BEETLE.

**T**HIS Insect is found mostly in flowers. Its oval body is black, except where the under part of the abdomen appears white, from the multitude of minute scales with which this part is covered. The elytra not only inclose the wings, but the sides and under-part of the body. These elytra are black, with white and red scales, resembling embroidery. This species is found in gardens. If rubbed, the small scales fall, and cause the Insect to appear entirely black.

GENUS



## GENUS X.

## COCCINELLA.

THIS Genus, of which we have given five specimens, *a, b, c, d, e*, comprehends those small Beetles which have red and yellow grounds, spotted with black; and are known even by children, who call them Lady-Birds.

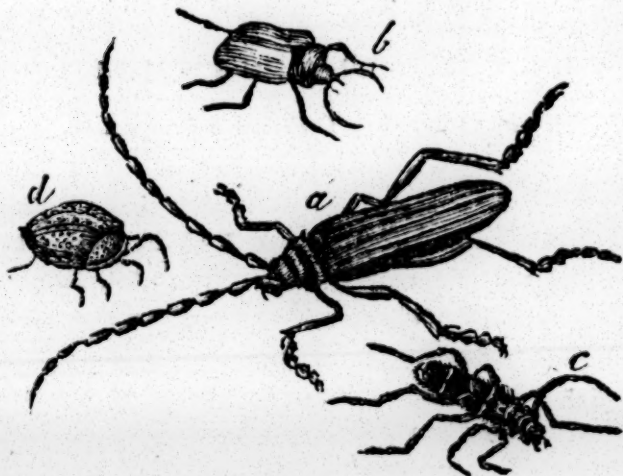
C

Of

Of all the different Larvæ of the Coccinella, the most curious is that which, from its tufts of hair, and singularity of figure, Mr. Reaumur calls the White Hedge-Hog. It feeds on the leaves of trees; and, having existed a fortnight in its Vermicular state, it turns to a Chrysalis, without divesting itself of its fur; and, three weeks after, it takes flight from its tomb, as a perfect Coccinella. When first produced, the colours of the elytra are nearly white; but, in a little time, they change to that lively brilliancy for which they are so justly admired. Their eggs are oblong, and of an amber colour. This beautiful little Insect is frequently found on Thistles.







## GENUS XI.

## CHRY SOM EL A.

*Character.*

THE Chrysomelæ have their antennæ, or feelers, shaped like bead-necklaces. This Genus contains a great variety of beautiful Insects, differing in size, colour, and abode. They are found almost every where, in Woods, Gardens, &c. When caught, they emit a disagreeable-smelling liquor.

## CHRYSOMELA GRAMINIS.

## THE GRASS CHRYSOMELA.

(b)

**T**HIS beautiful Insect, like most of the Genus, has an oval and very convex form. The colour is a fine glossy green, somewhat tinged with blue ; which affords a most charming reflect. The eyes are yellow, and the thorax and elytra are spotted. It is found in the meadows, in May and June, upon Water-Betony, Dead-Nettle, Mint, and other labiated plants. By some it is called the Blue-Green Chrysomela.

The glittering colours with which several species of this Genus are embellished, displaying the splendor of gold and copper, have conferred on them the pompous name of Chrysomela. The Larvæ prey upon the substances of leaves, without touching the fibres. The leaping Chrysomelæ infest the tender leaves of plants ; which should be carefully guarded from their depredations.

GENUS

## GENUS XII.

THE antennæ grow gradually larger from each extremity to the middle, and are situated between the eyes. The breast, and wing-cases, are covered. Protuberant spines.

## HISPA ATRA.---THE BLACK HISPA.

THIS pretty, singular Insect, of which we have not been able to obtain a correct figure, is of a deep polished black. The upper part of his body is clothed entirely with long and strong bristles, like the shell of a chesnut, or rather in the manner of a hedge-hog. The case of the horns has even a thorn at its end, to guard the Insect from injury. The breast has a row set transversely, which are forked. And the elytra, or wing-cases, are covered with a great number that are single. The points of all are firm and piercing. This Insect was found by Barbut, in the month of July, at the root of some long grass, in a field near Paddington. This Flying Hedge-Hog, if we may be allowed the term, is difficult to be taken. It bears its antennæ erect before it, as guardians of its progress through the aerial element.

## GENUS XVI.

## CERAMBYX MOSCHATUS.

## The NUTMEG CERAMBYX.

(a)

THE body of this Insect is entirely green, tinged with blue and gold colour, which renders it most delightfully resplendent. It is sometimes found composed entirely of blue and gold. The elytra are long, soft, and flexible, and finely shagreened. This beautiful creature is found upon the Willow, which it perfumes with an odour like that of a rose, so as to scent a whole meadow. Thus, we perceive, that Nature bestows on this insect this most grateful odour, to supply the want of those delightful scents of which meadows are deprived by the field flowers being shorn by the scythe of the mower; for it is observed, this charming Cerambyx is produced in its perfect state about the general time of making hay. What care does Providence take to accommodate man with a never-ceasing variety of delights, adapted to charm every sense!

GENUS

## GENUS XVII.

## LEPTURA.

*Character.*

THEIR antennæ are setaceous or bristly; the elytra diminish in breadth towards the extremity; and the thorax is round and slender.

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## LEPTURA ARCUATA,

## The RAIN-BOW LEPTURA,

(a)

VARIES in respect to size, and is of a deep black ground, resembling velvet. The antennæ are of a bright yellow, and nearly as long as the body. The elytra are adorned with high flame-coloured cross bars, which are formed by a down of a most refulgent golden yellow. Viewed through the microscope, it appears like velvet inlaid with topazes; and, when assisted with the solar rays,

rays, nothing can excel its infinity of splendor. This most wonderful Insect for beauty is the poor tenant of a decayed tree, on which it may be frequently found, especially on an Alder.

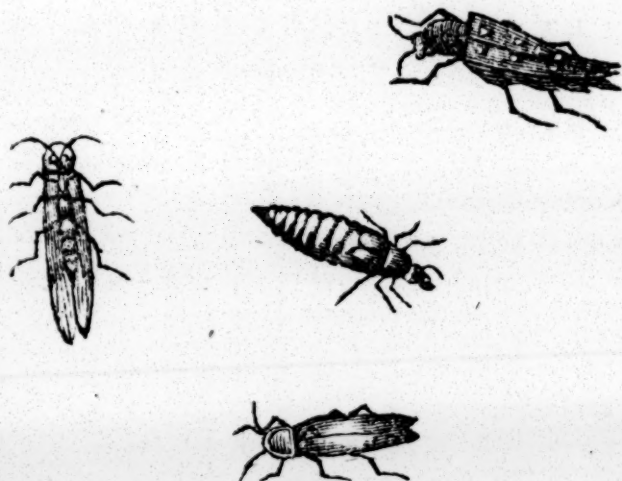
The Larvæ are found with those of the preceding Genus, which they greatly resemble in appearance and mode of existence.

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#### CASSIDA.---The SHIELD-BEETLE.

THIS Genus, which Barbut ranks under the ninth class, is thus named, from concealing its head under the margins of the thorax, as if it were defended with a helmet. Many of this species are found in foreign countries. Their Larvæ form for themselves a kind of umbrella, which shelters them from the sun and rain. These Insects inhabit Thistles and knotty plants. One species of them produce a Chrysalis, resembling an armorial escutcheon. This brings forth that singular Cassida, which is so distinguished for its variegated beauties. Many are found upon the wild Elecampane, growing on the side of ponds.

GENUS



GENUS XIX.

LAMPYRIS.

*Character.*

THESE Insects are chiefly distinguished by their emitting a light in the dark ; and are, therefore, called Fire-Flies. The females are apterous, or without wings.



## LAMPYRIS NOCTILUCA.

## The GLOW-WORM.

CONTRARY to the general order of Nature, the male of this Insect is less than the female. But the greatest difference between the sexes is, the male being covered with brown elytra, shagreened and marked with two lines longitudinally. The two last rings of the abdomen are not so bright as those of the female, but they have four luminous points.

The Glow-worm, which is frequently seen in woods and meadows at night in June, is the female of the figure we have given. The shining light it emits directs the male to his tender partner, which, not being able to fly, is thus most wonderfully provided by Providence with a self-possessing ray, in the sun's absence, to shew its mate the spot where it is anxiously waiting its company. Thus are the banks and hedges adorned with their little illuminations, while the nightly traveller is charmed with their beauteous splendour.

Their luminous power depends on a liquor placed at the lower extremity of the Insect, which by suction renders

renders it more shining, or by dilating or contracting itself withdraws or emits it at pleasure. That the light is caused by a species of phosphorus, is evident, from the animal, when crushed, leaving upon the hand a luminous matter, which continues its lustre until it is dried.

The perfect Insect, flies in Autumn evenings, and frequents plantations of Juniper-trees.

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The FIRE-FLY of the *East-Indies*.

(See the Insect on the left, and at the bottom, of the last Cut.)

**T**HIS Fly is about an inch long, and an inch broad. Their head is brown, and has two small horns or feelers. They have four wings. On their backs, they have a black bag, containing a luminous substance, which is concealed by their wings, unless expanded during their flight. In rainy seasons, they swarm among trees, and feed upon their blossoms. Of these flies, there are several species in the East-Indies. Being destined, seem-

ingly, to roam by night, in order to avoid the excessive heat of the sun by day in those sultry climates, how providentially has Nature accommodated them with a substance that renders their ærial course perceptible to each other! But when they alight, and swarm upon trees, their luminous substance, being no longer useful, is concealed and preserved by their closed wings.

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LAMPYRIS NOCTILUCA of *Martinico*.

The FIRE-FLY of *Martinico*.

THIS Fly, according to the Pere de Tertre, is less than the common Fly. They emit a sparkling golden light, which is extremely agreeable. But the Insect withdraws, and lets it shine at intervals, alternately, throughout the night. This effulgence is contained in a whitish substance, of which the Insect is so full, as to make it appear through the crevices of its skin at its pleasure.

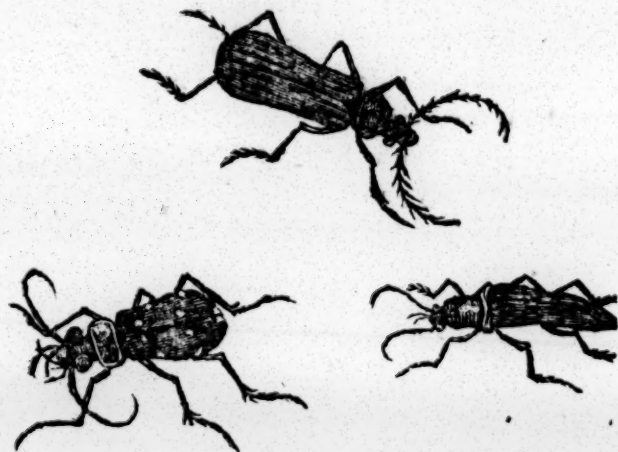
These different Fire-Flies seem destined by Nature not only to cheer the bosom of darksome night, but to  
guide

guide the wandering Savage through the pathless wood, or desert wild. Indeed, by their light, he may lay more secret snares for his shaggy prey on the mountain, or his finny prey in the deep, than he could by the presence of the sun. Thus, being deprived of that artificial light which he can only possess from civilization, Nature has fortunately created these admirable Insects for his convenience.



C 7

GENUS



## GENUS XX.

## CANTHARIS.

*Character.*

**T**HEIR horns or feelers are bristly; their breast is margined; and their elytra, or wing-cases, are flexible. They are commonly called Spanish Flies; but this is erroneous, as they are a distinct Genus from the Cantharides.

CAN-

## CANTHARIS LIVIDA.

## The LEAD-COLOURED CANTHARIS.

*(See the Insect on the top of the Cut.)*

**T**HIS Insect varies in the colour of the elytra; but this difference only arises from the difference of sex. Their horns are all black, except the articulations near the base, which are yellow. They have black eyes; and the head, in both sexes, is a yellowish red. The wing-cases are silky, flexible, and appear as if strewed with silver-dust, when viewed by a magnifying-glass. The abdomen, or belly of this Fly, is black; except the last rings, which are yellow. It is found upon a flower.



CAN-

## CANTHARIS PECTINICOMIS.

## THE COMB-HORNED CANTHARIS.

THE antennæ, or feelers, of this Fly, are black, combed, and as long as the body. The breast and elytra are of a beautiful scarlet. It has black legs, and yellow eyes. It is a pretty Insect, and is found among flowers.

This Genus contains a number of beautiful Insects, the colours of which vary according to the difference of sex, season, &c. which renders it unnecessary to describe them. They frequent flowers; and their Larvæ are similar to those of the Cerambyces, and are to be found in the trunks of decayed Willows, and other old trees. Although these Insects are frequently confounded with the Cantharides, yet they differ essentially: for the Cantharis have five articulations in the tarfi, or intermediate part between the leg and foot; but the Cantharides have five articulations, or joints, only, on the two first pair of legs, and four only to the tarfi of the last pair.

GENUS



GENUS XXI.

THE SKIPPER.

(See the Insect on the right-hand at the bottom of the Cut  
page 50.)

*Character.*

THEIR horns are bristly; and they have an elastic spring, or spine, which projects from the hinder extremity of the breast.

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ELATER SANGUINEUS.

THE BLOOD-COLOURED SKIPPER.

THE breast of this Insect ends, underneath, in a long point, or spine, which enters, as if with a spring, into a cavity in the upper part of the under-side of the thorax. By this admirable construction, the Skipper is enabled,

enabled, when upon its back, to leap in the air, and, thus, alight on its feet. It varies in size ; and, when young, the elytra are of a beautiful red : but in a few days they lose this splendid hue, which is then changed to polished black ; and, when viewed through a microscope, to nearly a chesnut-colour. The breast is a glittering, and appears with dark down, interspersed with some black hairs. The female is black, and marked with spots of a deeper die, occasioned by a velvet down, lying in tufts, which are only to be distinguished by the glass.

The Larvæ are found in the trunks of decayed trees, where they are transformed into perfect Insects, which flutter upon flowers, wander over fields, and conceal themselves in thickets, or under the bark of trees.



## GENUS XXII.

## CICINDELA.

(See the Insect on the left hand at the bottom of the Cut  
page 50.)

*Character.*

THE horns are bristly; the jaws porrected, and armed with teeth; the eyes are prominent; and the breast is rather round, and margined.

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## CICINDELA CAMPESTRIS.

## THE FIELD-SPARKLER.

THE Field-Sparkler is one of our most beautiful Insects. The upper part of its body is rough, and of a fine green, tinged with blue. The under side, legs, and horns, are of a shot colour, gold, and a red, inclining to the copper hue. The eyes, being prominent, give the head a broad appearance. The breast is pointed, and narrower than the head; which characterizes the Cicindela. Like the head, the breast is rough; and of a  
green

green colour, tinged with gold. The elytra are delicately and irregularly dotted, with six white spots on each. This Insect runs with great swiftnefs, and flies with facility. At the beginning of spring, it is found in dry, sandy places, where its Larvæ also inhabit. These are a long, soft, whitish worm, with six legs, and a scaly head. They make a perpendicular hole in the ground, at the entrance of which they keep their head, to catch other insects which fall in it. A spot of ground is sometimes entirely perforated in this manner.

The perfect Insects of this Genus are mostly so very beautiful, as to merit the attention of the curious in microscopic observations, as well as in natural researches; for some are minute, though not inferior in splendor to the larger; which renders them proper objects for the delightful amusement of the magnifying-glasses. And here it may be proper to observe, that living objects are always to be preferred to those which are dead, by the enquirer into the produce of Nature. The perfect Insects of this Genus are, like their Larvæ, perfect tigers in their disposition for prey, which they attack, and destroy, with every effort in their power.

## BUPRESTES GUTTALA.

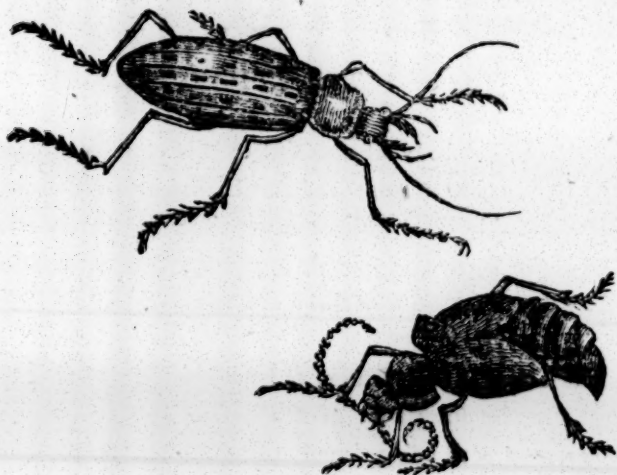
## The SPOTTED BUPRÆSTES.

THE whole body of this Insect is of a green and gold colour, with a blue tinge underneath. But it is chiefly distinguished by four white concave spots upon the elytra. The entire upper part of this Insect appears most beautifully dotted, when seen through a microscope.

The Larva is supposed not to have been yet discovered : but from the simularity of the perfect Insect with the Elater, and both being found among timber and decayed trees, the Larva and Metamorphosis may be imagined to correspond.



GENVI

**CACABUS GRANULATUS.****The GRAINED BULL-HEAD.**

*(See the Insect delineated on the top of the Cut.)*

**T**HIS Species is not only one of the largest, but the most beautiful and brilliant this country produces. The head, breast, and wing-cases, are of a coppery green. The clytra

elytra have three longitudinal rows of oblong raised spots. All the under-part of the Insect is black. But having no wings beneath the elytra, Nature has providentially supplied it with such legs as enable it to run with amazing swiftness. This Insect is frequently found in damp places, under stones and heaps of decayed plants in gardens. The colour sometimes varies; for it is frequently found coloured with a beautiful purple.

The Larvæ live under ground, or in decayed wood, where they remain until metamorphosed to their perfect state, when they proceed to devour the larvæ of other insects, and all weaker animals they can conquer.

They are frequently known by the name of the Ground-Beetle. Some are found so early as the beginning of March, in paths, &c. where the sun warms the earth with his vivifying beams. Many of the larger species have been found between the decayed bark and wood of Willow-trees.

GENUS



## GENUS XXVII.

## MELOE.

*Character.*

THE horns resemble necklaces; the breast is rather round; and the elytra are soft and pliant.

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## MELOE VESICATORIUS, or CANTHARIDES.

## The SPANISH FLY.

*(See the lower Insect in the Cut page 59.)*

THERE are several species of this Insect, differing in size, figure, and colour. But all are apparelled, by Nature, with great lustre. Green, azure, and gold colours, blend their hues to embellish them. They are mostly natives of the southern parts of Europe. The species used medicinally is nine or ten lines in length, of a shining

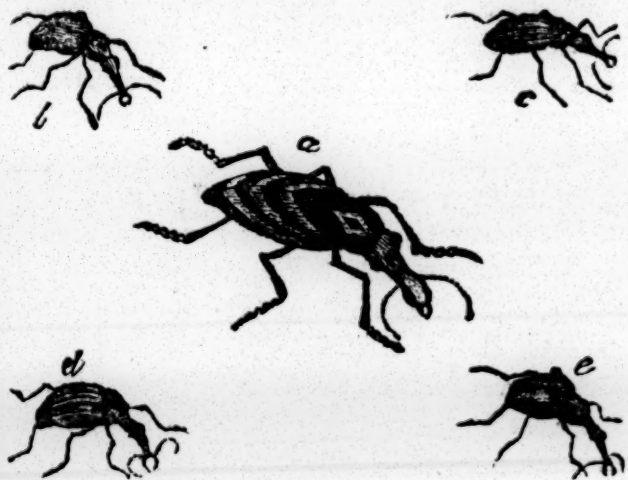
shining green colour mixed with azure, and very prolific. These Insects are sometimes observed to fly in swarms. A disagreeable smell, like that of mice, indicates their approach. By this scent, they are found by the gatherers, who collect them for the Apothecaries. When dried, fifty of them scarcely weigh a dram. Shrubs, and particularly the leaves of Ash-tree, are their food. So corrosive are the odorous particles emitted by this Insect, that great caution is required in taking them. For many have been known to have suffered greatly, by only having gathered a quantity of them with their bare hands in the heat of the sun: some have been oppressed with sleep, by sitting under trees on which swarms of Cantharides have settled. Contrary to the general custom of Nature, the female courts the male. The Larvæ are produced from the ground, where the eggs are always deposited. These Insects, reduced to powder, are exceedingly efficacious as blisters, in absorbing or drawing off humours which threaten the essential parts of life. But the Cantharides is, notwithstanding, a most formidable poison, if taken internally without the greatest caution. Some who have been afflicted by their incautious use of them, have found  
the

the best antidotes to be milk, olives, camphire, and oil of sweet almonds.

The Larvæ of the Meloes inhabiting this country, greatly resemble the perfect Insects; for they are of the same colour, are as large, and are as slow in their motion. They are generally found buried deep in the earth, where they metamorphose themselves into perfect Cantharides.

We have introduced the *Meloe Vescicatorius*, which is generally known by Cantharides or Spanish Fly, to shew in what it is different from a preceding Genus, called the Cantharis, for which it is frequently mistaken.





## CURCULIO, or WEEVEL.

*Of which we have given five specimens, a, b, c, d, e.*

THIS Insect feeds upon corn, the inside of which it eats, and leaves the bran. In this tribe, Nature dispenses the riches of her most refulgent colours, so as to dazzle the eye with splendor. But it is the microscope that must admit us to this scene of superlative beauty.

The

## 60 NATURAL HISTORY.

The *Curculio Regalis* found in Peru is a wonderful instance of the profusion of beauty Nature can bestow on even what is generally deemed the most inconsiderable of her products.

The Larvæ, resembling oblong, soft worms, are greatly dreaded for the injury they do in granaries. Corn-lofts are frequently laid waste by their ravages. The Insect, having remained within the grain until it has devoured the meal, lies concealed under the empty husk, until it passes its Aurelian state, and takes its flight as a *Curculio*. While one species feed on corn, others destroy, in the same manner, beans, peas, and lentils. To discover the grain infested by the Larvæ, it is thrown into water, when that part which swims is certainly perforated by the *Curculiones*. The heads of artichokes and thistles are often destroyed by these destructive Insects. This animal being so delightful in appearance, and so destructive in its nature, is a lesson which teaches that beauty may effect our ruin while it captivates our senses.

## GENUS XXX.

## FORFICULA.

*Character.*

THE horns are bristly; the wing-cases are half the length of the wings, which, being folded, are, notwithstanding, covered by the elytra; and the tail is forked.

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## FORFICULA AURICULARIO.

## THE EARWIG.\*

THIS Species is entirely of a deer colour. The horns are prettily intermingled and variegated. The wings are of the same colour as their elytra, or cases. This Insect is found in wet sand, near pools and rivulets; and, particularly, on Grape-vines. It is generally known, and dreaded by

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\* For a specimen of this Insect, see the Cut of the flower *Convolvulus*.

by many for its tendency to creep into the human ear. That it has this habit, the Editor of this volume can affirm from experience : but, that persons need be alarmed lest it should, thus, reach the brain, and cause death, he denies ; for the least acquaintance with the anatomy of the head, will evince the impossibility of the Insect reaching the inner part of the cranium by the avenue of the ear, from their being no communicate passage from one to the other. The forceps with which Nature has provided its tail, for defence, is capable of biting so as to cause, for the moment, rather a painful sensation. Although furnished with this defence, the Earwig has been observed not to use it, even when he has been surrounded with a swarm of Ants. But it will frequently pinch the finger of persons attempting to take them with their hands.

The Larva differs very inconsiderably from the perfect Insect.



## THE SECOND ORDER.

## GENUS II.

## MANTIS.

*Character of the Genus.*

THE head is unsteady, and has a nodding motion. The mouth is armed with porrected jaws; and the antennæ, or feelers, are bristly. They have four wings, which are membranous, and wrap round the whole body. The first pair of feet have teeth like a saw: and the breast is narrow, and extends to a considerable length.



MANTIS



## MANTIS GANGYLODES.

## THE WALKING LEAF.

**T**HIS Insect is remarkably shaped. The head is joined to the body by a neck longer than the body itself. It has two polished eyes, and two short feelers. The breast is long, narrow, and margined. The elytra, which cover

cover two thirds of the body of the Insect, are veined, and reticulated, or netted. The wings are veined, and transparent. The hinder legs are very long, the next shorter; and the foremost pair of thighs are terminated with spines. The rest have membranous lobes, which serve as wings to them in their flight. This Insect might, therefore, be justly called the Mercury of this part of the Creation. The top of the head is membranous, shaped like an awl, and divided at its extremity. This animal is ~~one of the innumerable~~ instances which Nature affords, to indicate the infinite wisdom of the Creator. Whenever any part of his workmanship is found to deviate from the general system, it is still formed to answer the design of its existence. This Insect, having such long legs, could never have sustained itself in the air, had not Providence bestowed on it a species of wings, to ballance its weight. These are the instances with which Nature teems; and which would make the Atheist tremble, had he but sense to contemplate the admirable design, system, and application, with which they are characterized, as

—— parts of one stupendous whole;  
 Whose body NATURE is, and GOD the soul.

D

This

This Genus is generally of a very beautiful green; but the colour soon fades, and becomes that of dead leaves; which has caused the inhabitants of China, where they are found, to call them by the name of Walking Leaves.

The Larva very much resembles the perfect Insect; but it is seldom seen in this country.

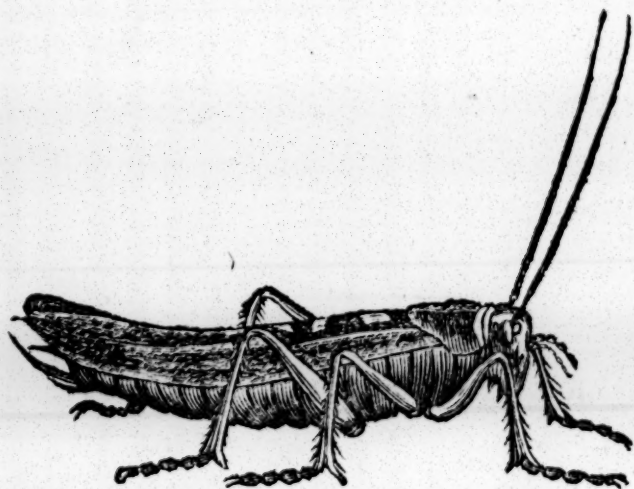
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### GENUS III.

#### *Character.*

THE head is bent inwards, armed with jaws, and furnished with palpe, or spiral tongues. The wings are so deflected as to wrap round the sides of the body. All the feet are armed with two crotchets, or nails; and the hinder are formed for leaping.

TETTI.



## TETTIGONIA.---THE GRASSHOPPER.

THIS Insect walks heavily, flies tolerably, and leaps with wonderful agility. It has an instrument in its tail, with which it digs holes on the ground, for the reception of its eggs. The Grasshopper lays a great number at one sitting, of which they form a groupe, by uniting

D 2

them

them with a thin membrane. The little Larvæ resemble entirely the perfect Insect, except in the size, and having neither wings nor elytra. These, as well as the perfect Insect, are frequently found in meadows. They both feed on herbs very voraciously. The Grasshopper, having many stomachs, has caused several authors to assert that they chew the cud, like some other larger animals.

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### GRYLLUS.---THE CRICKET.

*(See the Tulip, for this Insect.)*

THIS family of Insects is called in England, Crickets, from the sound or noise they make. Towards sun-set they leave their subterraneous habitations, when they make the fields resound with their chirpings. The domestic Grillæ abide in ovens, and hearths on which wood is burnt: here they frequently are troublesome, by their perpetual noise, and crawling about persons sitting near the fire. But a popular prejudice, in many parts of England,

England, prevents their being driven away, or destroyed: for the poor peasants, and common people, imagine they bring good fortune to whatever house they attach themselves. So true it is, that the most absurd chimeras enter the minds of the ignorant, who are always prone to superstitious errors.

This Insect is chiefly distinguished by having at its hinder extremity two bristles.

The Domestic and the Field Cricket are the same species; all the difference is, that the former more inclines to a yellow, and the latter to a brown hue.

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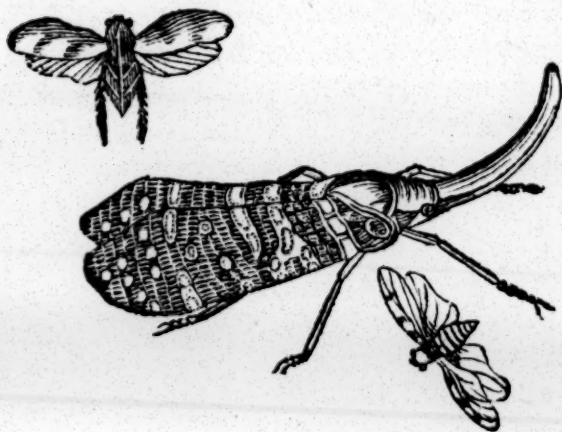
GENUS IV.

F U L G O R A.

*Character.*

THE front of the head is empty, and extended. The horns, which have two articulations, are scaled below the eyes.





## FULGORA CANDELARIA.

## THE LANTERN FLY.

THE head and breast of this Insect are generally the colour of a muddy brown; the elytra are of a lively green, spotted with a pale yellow; the wings are of a beautiful yellow, and have their extremities bordered with a glossy black. When the Insect flies, the waving of the elytra

elytra cause the transparent spots to appear in the night like radiant flashes, forming various figures, according to the fancy of the wondering beholder. This Fly is a native of China.

*(See the Insect in the centre of the opposite page.)*

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## ANOTHER LANTERN FLY.

THIS Lantern Fly is a nocturnal insect, that has a hood, or bladder, on its head, which appears like a lantern, in the night: but by day it is clear and transparent, and very curiously adorned with red and green stripes. Such a shining light issues from this part of the Insect, that it is possible to read by it. The wings, and whole body, are elegantly adorned with a mixture of red, green, yellow, and other splendid colours. The creature contracts or dilates the hood, or bladder, as it pleases. When taken, they withdraw their light; but when at liberty, they suffer it to shine again, with all its wonderful resplendency.

These Flies are as luminous as a lighted torch, while they reflect a lustre on all neighbouring objects. They are in continual motion during the night; but the motion is various, and uncertain: sometimes they rise, and then sink. They will frequently disappear, and the next instant rise in another place. They commonly hover about six feet from the ground. It is said, there is not a night in the year in which they are not seen. In the coldest winter they are more frequently observed, than in the warmest summer. Neither rain or snow hinders their appearance. From all these circumstances many suppose it to be the Ignis Fatuus, or the Jack-in-the-Lantern; which, many have contended, is an inflammatory meteor, exhaled from marshy lands, over which it is observed to wander in the darkest night.



## GENUS V.

## C I C A D A.

*Character.*

THE head bends downwards; the feelers are bristly; the four wings are membranous; and the feet are adapted to leaping.

*(See the two small Insects on the last Cut.)*

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## CICADA SPUMERIA.

## THE FOAMY FROG-HOPPER.

AMONGST the Species found in this Country, of this Genus, this is one of the largest. It is a brown, tinged with green. The head, breast, and elytra, are beautifully dotted: on the last are two white spots. Before the Insect has metamorphosed itself, the Larva which produces it, lives and resides upon plants: but it is not perceived, unless the spot of its devouring is certainly known; for by emitting, from every part of its

D<sup>5</sup>

body,

body, foamy bubbles, resembling spittle, under which it conceals itself, the Larva is not easily discovered: but when this froth is removed, the Larva is found: but it is soon covered again, by a fresh emission of froth. Thus the Larva is enabled by Nature to preserve itself against the injury of the weather, and from being destroyed by other Insects. This is another instance of the variety of means adopted by the Creator to preserve the balance of all things. As the Larva of this Insect is liable to be preyed upon by different animals, it is provided with the power of emitting this foam, as the only protection against its enemies.

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### CICADA SANGUINOLENTA.

#### THE CRIMSON FROG-HOPPER.

**T**HIS is thought the finest Species which we, in this Country, possess of this Genus. The elytra alone have six large beautiful crimson spots: both the elytra are black at their extremity; and the wings are a dusky colour,

lour, and tinged with a little red at their base. This Insect, not leaping much, is easily taken; but not near London; as it is very seldom found near the Metropolis. It varies according to the different size of the crimson spots observed on its elytra, or wing-cases.

(See the smallest Insect in the last Cut, page 70.)

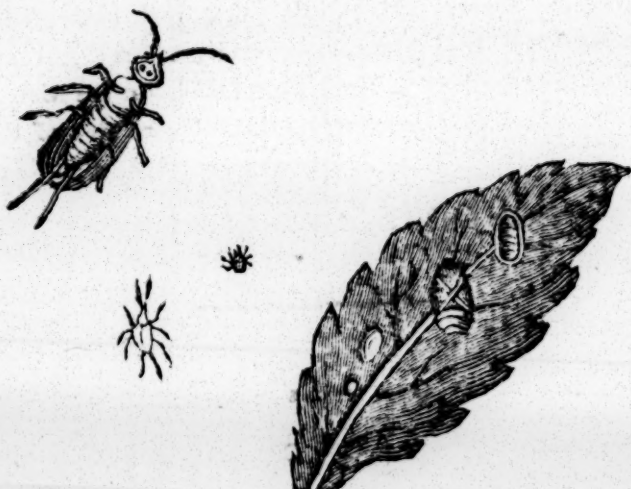
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G E N U S   X I .

C O C C U S .

*Character.*

THE trunk is placed in the breast; the hinder part of the abdomen is bristly. The males have two erect wings; while the females are apterous, or without any.



### COCCUS PHALARIDIS.

#### THE COCHINEAL FLY.

**T**HE feet and body of this Insect are nearly of a pink colour, and sprinkled with a little white powder. The wings and four threads of its tail, are of the clearest white. It is found on a species of grafs called Phalaris. The female forms, on the stalk of this dog-grafs; a white  
downy



downy nest, in which she deposits her eggs. Being brought over with exotic or foreign plants, they are sometimes found in hot-houses. This species of Gall-insect is used in dying scarlet. When the dried Cochineal is steeped in water, or vinegar, the parts of the body unfold themselves ; and become so visible, as to display even the ligaments of the legs.

The Indians in Mexico, where the propagation of the Cochineal is a considerable concern, gather them, and put ten or twelve in moss, or the flue of the Cocoa : they are then hung upon the thorns of the Indian Fig-tree, which grows in great quantities round their habitations. They are so prolific as to afford three gatherings of them every year. As soon as they are collected, they are destroyed. Some they kill by the heat of ovens ; and others, by throwing them into hot water : while many are destroyed upon the hot plates used for roasting maize. Three pounds of fresh Cochineal weighs but one pound when dried. Cochineals will preserve, for ages, its colouring particles. This valuable Insect is used for dying scarlet and crimson. The English mix it with Gum Lac,

to dye their cloths. The Cochineal furnishes painters with many beautiful and splendid tints. It is computed, that 880,000 lb. of these Insects is imported yearly into this Kingdom. Were it propagated in our American Islands, where the climate is congenial with this Insect, great advantages might be derived: and as the Cochineals of Europe resemble greatly those of America, they might, probably, be productive of emolument.



## THE THIRD ORDER.

## INSECTA LEPIDOPTERA.

**L**EPIDOPTEROUS Insects have four wings, covered with scales. The mouth has a spiral tongue, which they unfold at pleasure. Their bodies are hairy.

This Order is divided into three Genera.

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## GENUS I.

## P A P I L I O.

**T**HE horns are thickest at their extremities; and are in most terminated by a kind of capitulum, or little head. When sitting, the wings are erected, and touch each other; as represented in pages 11 and 13.

D :

GENUS

## GENUS II.

## S P H I N X.

*Character.*

**T**HE horns are thickest in the middle ; resembling, in form, a prism. The wings are bent inwards. They are slow and heavy in their flights, which they take either late in the evening, or early in the morning.

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## GENUS III.

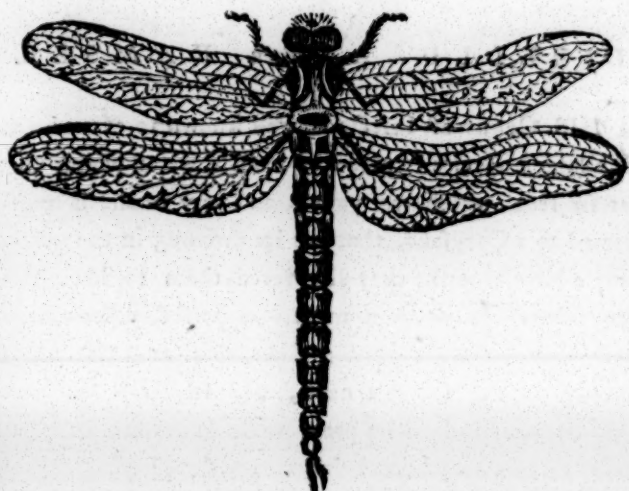
## P H A L E N A.

*Character.*

**T**HE horns are bristly, decreasing in size from the base to the point ; which chiefly distinguishes it from the Butterfly. The wings, when at rest, generally turn down. They fly in the night.

For a more particular description of Butterflies and Moths, see our account, from page 8 to page 26 ; where we have given eighteen correct Drawings of Butterflies, Moths, Caterpillars, &c.

THE



## THE FOURTH ORDER.

## INSECTA NEUROPTERA.

**N**EUROPTEROUS Insects have four transparent, membraneous, and uncased wings, which are veined like net-work. Their tail is unarmed, or stingless: but it is frequently furnished with appendices, like pincers, by which the males are distinguished.

LIBEL-

## LIBELLULA.---THE DAMSEL.

THIS Genus of Insects is well known to every body. The largest species is produced from a water-worm, that has six feet, which, yet young, and very small, is transformed to a Chrysalis, that has its dwelling in the water. People have thought they discovered them to have gills like fishes. It wears a mask, as perfectly formed as those that are worn at a masquerade; and this mask, fastened to the Insect's neck, and which it moves at will, serves it to hold its prey, while it devours it. The period of transformation being come, the Chrysalis makes to the water-side, undertakes a voyage, in search of a convenient place; fixes on a plant, or sticks fast to a bit of dry wood. Its skin, grown parched, splits at the upper part of the thorax. The winged Insect issues forth gradually, throws off its slough, expands its wings, flutters, and then flies off with gracefulness and ease. The elegance of its slender shape, the richness of its colours, the delicacy and resplendent texture of its wings, afford infinite delight to the beholder.

In

In order to accomplish the purpose of Nature, the male, while hovering about, watches, and then seizes the female by the head, with the pincers with which the extremity of his tail is armed. The ravisher travels thus through the air, till the female yields to his superior strength. These flies are seen thus coupled in the air, exhibiting the form of a ring. The female deposits her eggs in the water, from whence spring Water-worms, which afterwards undergo the same transformations.





## LIBELLULA GRANDIS.

## THE GREAT DAMSEL.

THIS species is the largest of any this Country affords. Its head is yellow, especially forwards; its eyes are brown, and being very large, meet on the top of the head, and are often set with dots, raised and shining, which would constitute a very distinctive character, if it were constant; but sometimes those dots are absent, or there are, at most, but one or two. The thorax is dun-coloured, with two oblique bands on each side, of a lemon-colour. The abdomen, which is very long, is likewise of a deep buff, often spotted with white on the top and bottom of each segment. The small laminae that terminate the abdomen are very long in this species. The wings have more or less of the yellow dye, with a brown spot on the exterior edge. At the rise of each wing there is a small protuberance, of a dark brown colour.

LIBEL-

## LIBELLULA VIRGO.---THE VIRGIN.

THIS beautiful Libellula has a large head, reticulated, prominent, brown eyes, that are not in contact with each other. The space intervening between the eyes, exhibits the three brown stemmata, placed in a triangle. The neck, on which the head is rested, is short and narrow. The thorax is larger, of a bright green and blue colour. From the inferior part of the thorax arise the six legs, long, and charged with a double row of small spines, a circumstance common to this Genus. From the upper part come forth the four wings, all of equal size. They are much reticulated, and have on their middle a large cloud, of a blueish brown, that occupies above one half of them. The base and extremity of the wing are, the only parts not charged with the same colour, being only of a yellowish hue. On the outer edge of the wing there is no spot; which is uncommon in this Genus. The abdomen, long, cylindric, and consisting of nine or ten segments, is of a blue colour, sometimes bordering on green, and very bright. This beautiful Insect is met with in meadows, on the banks of ponds.

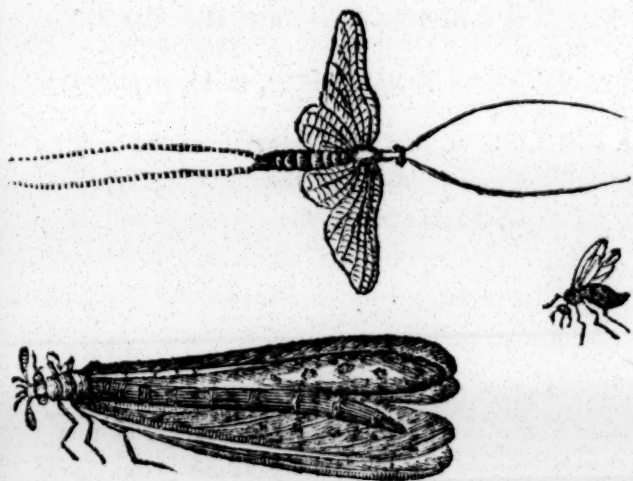
LIBEL-

## LIBELLULA PUELLA.

THE wings of this Insect are whitish, nicely veined with black, with a black spot on the exterior edge towards the extremity. The colour of the head is a leaden blue, with brown eyes. The thorax, which is blue, is adorned with three brown longitudinal bands, one on the middle, and two narrower ones on the sides. The segments of the abdomen are blue, with a black ring towards their posterior extremity. They are nine in number; the two last larger than the rest, and entirely brown. This Insect is found in meadows.

The remaining Libellula is only a variety in colour, the body being of a fine red.





## GENUS II.

## EPHEMERA.

*Character.*

THE mouth has neither teeth nor spiral tongue. The wings are erect, and the hinder shortest. The tail is furnished with hairs, or bristles. The horns are short and bristly.

EPHE-

## EPHEMERA.---THE DAY-FLY.

*(See the Insect on the top of the Cut, in the preceding page.)*

THESE Flies derive their name from the short period of their existence. Some of their different species live several days ; while others, that take their first flight at the setting of the sun, die before that luminary rises again. Some have only the life of an hour ; others exist but half an hour.

The Ephemeræ, before they fly, have been in some manner fishes : and, what is very remarkable, they have been observed to remain as long as one, two, and three years, in their Larva and Chrysalid states. Both the Larva and Chrysalis have small fringes of hair on each side ; which, when moved in the water, serve them as fins. The plying of these little oars is exceedingly curious. The Larvæ make their residence by perforating, or making holes in the banks of rivers ; and, when the water falls, or decreases, they make other holes lower, in order to have ready access to their favorite  
element.

## NATURAL HISTORY. 8,

element. Flames attract them so, as to cause them to form a thousand circles round such a light, with an amazing regularity. One single female will lay seven or eight eggs, which sink to the bottom of the water, where they are deposited. The Larvæ which they produce construct habitations to shelter them from every danger. The Flies, having propagated, immediately die in heaps. Fishermen consider these multitudes of destroyed insects, as manna for the fish. We can, therefore, perceive, that even this Insect, which cannot, for its very short existence, be of much service during life, is, by the wisdom of the Creator, so calculated, as to be of essential service, even in its departed state.



GENUS

## GENUS V.

## MYRMELION.

*Character.*

THE mouth is armed with jaws, two teeth, and four long spiral tongues. The tail, in the male sex, is forked. Their feelers are club-formed, and as long as the breast; and the wings bent downwards.

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## MYRMELION.---THE ANT-EATER.

(See the *Insect* at the bottom of the *Cut*, page 88.)

AS few Insects afford greater entertainment, or gratify curiosity, by their wiles and stratagems, than this; we shall forbear all uninteresting description, to confine ourselves to what we think more essential. Before the head



of the Larvæ, is placed a dentated forceps, with which they catch and suck flies, and ants especially. This animal having a retrograde motion, which prevents its being able to pursue its prey, it has recourse to the following stratagem. Having dived into the sand, or soft mould, it hollows out furrows, that meet in a center, and grow deeper by degrees. The superfluous sand it carefully removes from the scene of action: after this, it digs a hole, like a funnel, at the bottom of which this animal stations itself, suffering only its extended forceps to be seen above it. Ruin awaits the insect that falls, unfortunately, into this cavity. The Myrmelio, being apprised of its approach, by grains of sand rolling down to the bottom, immediately overwhelms the fallen prey with a shower of dust, which it casts with its horns. It then drags the poor captive to the bottom of the hole, where it is immediately destroyed. Such is the rapacity of this creature, that it will prey in this manner even on its own species. This is one of the few instances Nature affords of any one sort of animal preying on its fellow-creatures. To the disgrace of man, this destruction

of

of each other is very rarely sanctioned by example, in all the infinite course of being with which the Creation abounds.

The perfect Insect of the Ant-Eater is very seldom found; when it is, it is chiefly in sandy places, near rivulets.



THE FIFTH ORDER.

INSECTA HYMENOPTERA.

**H**YMENOPTEROUS Insects have four membranous wings : and most of their tails have stings ; except the males, which are harmless.

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GENUS I.

CYNIPIDES.

*Character.*

**T**HE mouth is armed with jaws ; but has no trunk.  
The sting is spiral, and concealed mostly in the body.



CYNIPS.

## CYNIPS.---THE GALL-FLY.

(See the small Insect in page 88.)

**T**HIS Insect is of a burnished shining brown colour: the horns are black, and the feet chesnut; and the wings are white. The Gall-Fly is produced in those little smooth, round, and hard Galls, which are found fastened to the fibres under Oak-leaves. This gall is caused by the overflowing of the sap of the leaf, occasioned by the Fly having pierced it, for the purpose of depositing there its eggs. Sometimes, instead of the Cynips, a large Insect proceeds from the Gall, and which is called an Ichneumon. This latter Insect is not the real inmate of the Gall: he is a parasite, whose mother deposited her egg in the yet tender Gall; and, when hatched, produces a Larva, that devours the Larva found there of the Cynips. Of this Genus, there is a Species which causes the Galls of which the Norway ink is made.



## GENUS VIII.

## A P I S.---THE B E E.

THESE Insects are divided into several Species, which are distinguished from each other, by genius, talent, manner, and disposition. Some live in society, and share the toils: others dwell, and work, in solitude; building

building the cradles of their families, as the Leaf-cutter Bee does, with a rose-leaf; the Upholterer, with the gaudy tapestry of the corn-rose; the Mason-Bee, with plaster; and the Wood-Piercer, with saw-dust. But all, in general, are employed, in their little kingdom, with providing for their posterity, and contributing to the general welfare of their community.

Of Bees there are three sorts; the Plebeians, the Drones, and the Queen. The Queen, or Parent-Bee, is the soul of the hive: to her all the rest are so attached, that they will follow her wherever she goes. If she happens to die, all their labours are at an end, an universal mourning ensues, and all her subjects die, by rejecting their food. Should a new Queen arise, before this catastrophe attends the hive, joy renovates their spirits, and their toils are renewed. This has been tried by removing the Chrysalis of a Queen-Bee from one hive, to another which had lost its own Empress. But this attachment is only in proportion to the utility she affords to the commonwealth. She is so prolific, that she lays 15 or 18,000 eggs, which produce 800 males, four or five

five Queen Bees, and the rest Neuters, or Plebeians. Their cells differ in size; the largest are for the males, the royal cells for the Queens, and the smallest for the Neuters. The Parent-Bee deposits in those cells such eggs as will produce the species for which the respective cells are destined. In two or three days the eggs are hatched; when the Neuters turn nurses to the rest, which they feed, most tenderly, with unwrought wax and honey. After twenty-one days, the young Bees are able to form colonies, with such indefatigable activity, that they will do more, in one week's time, than they will during all the rest of the year. Sometimes there are Bees less laborious, who support themselves by pillaging the rest of the hives; on which a battle ensues between the industrious and the despoiling Insects. Frequently contentions will arise among them, when a new colony seek their habitation in a hive already occupied. Their foes are the Wasp and Hornet; which will rip open their bellies with their teeth, in order to suck out the honey contained in the bladder. Sparrows, sometimes, are seen to take one in their bill, and one in each of their claws.

E

The



The Neuter Bees collect from flowers their honey and unwrought wax : they roll themselves over the stamina, and thus cause the dusty essence to stick to the hairs which cover different parts of their bodies. Being thus laden, they proceed with their burden to the hive; where they are met by other Bees, that swallow the wax they bring: this being afterwards refined in the laboratory of their stomachs, is again produced by the mouth, as genuine wax, in the form of dough, which is next moulded into cakes of an admirable structure.

From the nectareous effluvia of flowers the Bee collects the honey, by means of its proboscis, or trunk ; which is a most astonishing piece of mechanism, consisting of more than twenty parts. Entering the hive, the Insect disgorges the honey into cells, for winter subsistence ; or else presents it to the labouring Bees. A Bee can collect, in one day, more honey than a hundred chemists could extract in a hundred years.

When they begin to form their hive, they divide into four parties : one is deputed to the fields, to collect materials

terials; another is ordered to work on these materials; a third is left to polish the rough work of the cells; and the fourth is allotted to provide food for the labourers. There are waiters always attending, to serve the artizan with immediate refreshments, lest he should be too long absent from his work, by going to gather it himself.

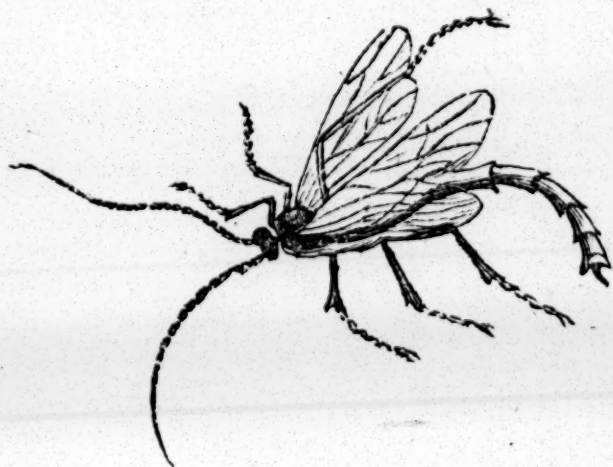
So expert are these Bees, that an honeycomb, composed of a double range of cells, backed one against another, and which is a foot long, and six inches broad, is completed in one day, so as to contain 3000 Bees. The cells are most curiously composed of little triangular sides, which unite in one point, and exactly conform to the like extremities of the opposite cells, respectively. At every cell, the Creator has, most wisely, taught them to form a ledge, which fortifies each aperture against the injuries they might receive from the frequent ingress and return of the Bees.

How grateful ought we to be for the creation of this admirable Insect! To his toil and wisdom we are indebted for one of the most agreeable and wholesome sub-

100      NATURAL HISTORY.

stances afforded by Nature. Were it not for the Bee, these flowery sweets would be lost in the "the desert air," or decline with the fading flower. All the various uses to which wax is applied, would be lost to man, had not the Bee an existence.





## GENUS IV.

*Character.*

THE mouth has jaws, without any tongue. The horns contain more than thirty joints; and the abdomen is generally joined to the body by a pedicle. The sting is inclosed in a cylindrical sheath, composed of two valves.

## THE ICHNEUMON.

ONE distinguishing and striking character of these species of flies, is the almost continual agitation of their antennæ. The name of Ichneumon has been applied to them, from the service they do us, by destroying Caterpillars, Plant-lice, and other Insects; as the Ichneumon and Mangouste destroy the Crocodile. The variety to be found in the species of Ichneumons is prodigious among the smaller species. The males perform their courtships in the most passionate and gallant manner. The posterior part of the females is armed with a wimble, visible in some species, no ways discoverable in others; and that instrument, though so fine, is able to penetrate through mortar and plaster. The structure of it is more easily seen in the long-wimbled fly. The food of the family to be produced by this fly, is the Larva of Wasps, or Mason-Bees; for it no sooner perceives one of those nests, than it fixes on it with its wimble, and bores through the mortar of which it is built. The wimble itself, of an admirable structure, consists of three pieces:

pieces: two collateral ones, hollowed out into a gutter, serve as a sheath; and contain a compact, solid, dentated stem; along which runs a groove, that conveys the egg from the animal, which supports the wimble with its hinder legs, lest it should break; and, by a variety of movements, which it dexterously performs, it bores through the building; and deposits one or more eggs, according to the size of the Ichneumon, though the largest drop but one or two. Some agglutinate their eggs upon Caterpillars eggs, though very hard; and deposit their own in the inside: when the Larva is hatched, its head is so situated that it pierces the Caterpillar, and penetrates to its very entrails: these Larvæ pump out the nutritious juices of the Caterpillar, without attacking the vitals of the creature; which appears healthy, and even sometimes transforms itself to a Chrysalis. It is not uncommon to see Caterpillars fixed upon trees, as if they were sitting upon those their eggs; and it is afterwards discovered that the Larvæ, which were within their bodies, have spun their threads, with which, as with cords, the Caterpillars are fastened down, and so perish miserably.

The Ichneumons performed special service in the years 1731 and 1732, by multiplying in the same proportion as did the Caterpillars: their Larvæ destroyed more of them than could be effected by human industry. Those Larvæ, when on the point of turning into Chrysalids, spin a silky cod. Nothing is more surprising and singular, than to see those cods leap, when placed on the table, or hand. Plant-lice, the Larvæ of the Curculiones, Spider's eggs, are also sometimes the cradle of the Ichneumon-fly. Carcasses of Plant-lice, void of motion, are often found on rose-tree leaves. They are the habitation of a small Larva; which, after having eaten up the entrails, destroys the springs and inward economy of the Plant-louse, performs its metamorphosis under shelter of the pellicule which enfolded it, contrives itself a small circular outlet, and falls forth into the open air.

There are Ichneumons in the woods, which dare attack Spiders, run them through with their sting, tear them to pieces, and thus avenge the whole nation of flies of so formidable a foe: others, destitute of wings, (and those are females), deposit their eggs in Spiders nests.

The



The Ichneumon of the bedeguar, or sweet-briar sponge, and that of the rose-tree, perhaps, only deposit their eggs in those places, because they find other insects on which they feed.

The Genus of the Ichneumon flies, might, with propriety, be termed a race of diminutive canibals.



## GENUS IX.

## FORMICA.

*Character.*

A Little upright scale is situated between the breast and the belly. The feelers are broken, and have the first articulation longer than the rest. The females and Neuters have a sting, concealed in the abdomen. The males and females are winged; and the Neuters are apterous, or without wings.

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## FORMICA.---THE ANT.\*

NOT to impose upon our Readers those fables which have been related of this remarkable Insect, we shall confine ourselves to the most authentic accounts, and to our

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\* For a specimen of the male and female Ant, see the Austrian Rose, and Garden Pink.

our own observations, in what we shall briefly mention respecting the Ant. Sanctorius says, when the Ants carry any corn to their habitations, they carry it, exactly in form and intention, as they do bits of wood, for the construction of their dwellings merely. For what purpose should they provide corn for the winter, when they pass that season without motion? But, from what we have lately observed ourselves, we rather imagine this error arose from some persons having seen them dragging a number of their Aurelias, when they have been removed, by a hoe or spade, again to their repositories; for these Aurelias are exactly of the size and colour of a grain of wheat. The great prudence Ants discover is in sheltering themselves from cold, which, when severe, almost deprives them of motion.

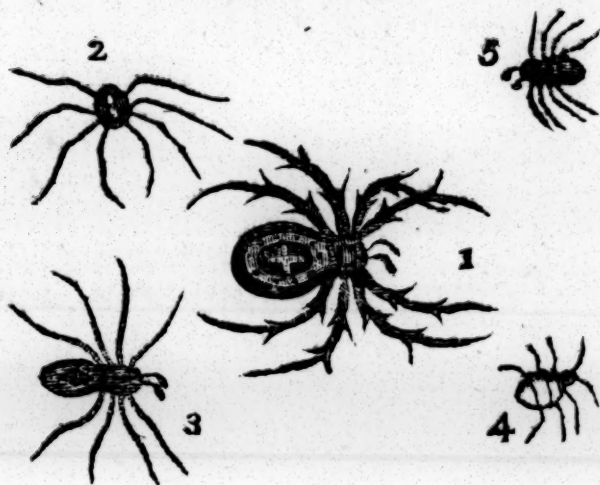
At the beginning of March, if the weather be warm, they go abroad in search of nourishment. If corn be thrown to Ants, they will remove it, from place to place, by some dragging, others lifting, and two or three more pushing forward, the weighty masses. A grain of wheat must be considered in proportion to their size and strength.

They have the precaution to make a bank, near six inches high, above the entrance; and to make several roads, to go out and in, by what may be called their terrace-walk. From May or June, they work until the season's change discontinues their industry. This labour is entirely for their preservation of their brood, which is produced during the fine weather. When they attack fruit, they tear it into small bits, and thus is each Ant enabled to carry home his provender. Liquors which are sweet, they have a mode of saving, and carrying some for their young. They send their foragers to seek for food: if one of them proves successful in finding some, he returns to inform the republic, and immediately rallies from their town, to capture the prize. To prevent any delay, obstruction, or confusion, they have two tracks; one for the party loaded, and the other for that which are going to load themselves. Should any be killed, some of them instantly remove the slain, to a distance. When provisions are scarce, they portion them according to their present and future wants.

A nest of Ants is a small well-regulated republic, united by peace, unanimity, good understanding, and mutual

mutual assistance. Great police in their little labours, prevents among them those disorders which frequently embarrass and perplex the happiness of even man, who assumes to himself the title and consequence of Lord of the Creation. Each Ant has its task assigned it; whilst one removes a particle of mould, another is returning home to work. They never think of eating, until all their task is performed. Within their common, but subterraneous hall, which is about a foot deep, they assemble, form their social communities, shelter themselves from bad weather, deposit their eggs, and preserve their Aurelias; which, resembling grains of corn, as was observed before, has caused many to mistake them for their granaries.





THE SEVENTH ORDER.

INSECTA APTERA.

**A**PTEROUS Insects are distinguished from those of every other Order, by neither sex having wings.

FIGURE

## FIGURE 1.

This small Spider is of a scarlet colour. It was found in a wood the beginning of June. They are likewise found on trees in gardens. They are the only species of Spiders that are thought to be venomous, except the Tarantula : for Spiders are, in general, more frightful than injurious. This Spider, and all the rest here described, are drawn from Nature ; and are exactly the size of the Spiders themselves.

## FIGURE 2.

Has six eyes. It was found in a wood in April. The colour is chiefly dark, with a broad streak of light colour in the middle of its back ; and the form of a diamond, of the same colour, on the upper part of its belly. The legs are beautifully spotted.

## FIGURE 3.

This small long-legged Spider is so finely marked, that it is impossible to describe it, either in words or colours ;

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there



there being so admirable a combination of green, red, and black, interchangeably disposed into the most agreeable forms. The legs are as curiously marked with the same colours. Its small eyes are not discernible.

## FIGURE 4.

This is one of the Leaping Spiders. It has eight eyes, placed in a circle; and all that have their eyes thus disposed, leap at their prey, like a cat seizing a mouse. It is extremely nimble; and was taken in a garden. When viewed through a microscope, its beauty appears unparalleled. Black, chestnut, red, and white, are most admirably disposed into the most beautiful forms; but to the naked eye, it only appears rough, hairy, and grey-speckled. Dr. Hook gives the following diverting account of this Spider, as described by Mr. Evelyn in his Travels through Italy.

“Of all the sorts of Insects,” says he, “there is  
 “none has afforded me more diversion than the small  
 “Grey Jumping Spider, prettily bespecked with black  
 spots

' spots all over the body, which the microscope dis-  
 " covers to be a kind of feathers, like those on But-  
 " terflies wings, or the body of the White Moth. It  
 " is very nimble by fits, sometimes running, and  
 " sometimes leaping like a Grasshopper; then standing  
 " still, and setting itself on its hinder legs, will very  
 " nimbly turn its body, and look round itself every  
 " way. Such," says Mr. Evelyn, " I did frequently  
 " observe at Rome, which, espying a Fly at three  
 " or four yards distance, upon the balcony where I  
 " stood, would not make directly to her, but crawl  
 " under the rail, till, being arrived right under her,  
 " it would steal up, seldom missing its aim: but, if  
 " it chanced to want any thing of being perfectly  
 " opposite, would, at the first peep, immediately slide  
 " down again; till, taking better notice, it would come,  
 " the next time, exactly upon the Fly's back; but,  
 " if this happened not to be within a competent leap,  
 " then would this Insect move so softly, as the very  
 " shadow of the dial seemed not to be more impercep-  
 " tible, unless the Fly moved; and then would the Spi-  
 " der move also in the same proportion, keeping that  
 " just

“ just time with her motion, as if the same soul had  
“ animated both those little bodies ; and, whether it were  
“ forwards, backwards, or to either side, without at all  
“ turning her body, like a well-managed horse : but if  
“ the capricious Fly took wing, and pitched upon another  
“ place, behind our huntress, then would the Spider  
“ whirl its body so nimbly about, as nothing could  
“ be imagined more swift ; by which means, she always  
“ kept the head towards her prey, though, to appearance,  
“ as immovable as if it had been a nail driven into the  
“ wood, till, by that indiscernible progress, being arrived  
“ within the sphere of her reach, she made a  
“ fatal leap, swift as lightning, upon the Fly, catching  
“ him in the pole, where she never quitted hold till  
“ her belly was full, and then carried the remainder  
“ home. I have beheld them instructing their young  
“ ones how to hunt ; which they would sometimes discipline  
“ for not well observing ; but when any of the  
“ old ones did miss a leap, they would run out of the  
“ field, and hide themselves in their crannies, as  
“ ashamed, and not be seen abroad for four or five hours  
“ after : for, so long have I watched the nature of this  
“ strange

“ strange Insect, the contemplation of whose so wonderful sagacity and address has amazed me : nor do I find, in any chace whatsoever, more cunning and stratagem observed. I have found some of these Spiders in my garden, when the weather, towards the spring, is very hot ; but they are nothing so eager of hunting as they are in Italy.”

## FIGURE 5.

This is called the Carter, or Long-legged Spider. It has only two eyes, which are most curiously placed on the top of a small pillar, rising out of the top of the back. The eyes have a black purple in the centre of the cornea, and the iris of them is grey. It is likewise remarkable for the length of its legs, and diminutive body. The legs are also jointed, like those of a crab ; and each terminates in a small shell case, shaped like that of a muscle : they are fastened to the body, in a manner that most curiously displays the wonderful mechanism of Nature. Thus is the Insect enabled to move, with the greatest celerity, over the tops of grass and leaves, where  
it

it searches for its prey. The head, breast, and belly, of this creature, are so indiscriminated by Nature, that it is scarcely possible to discern the one from the other. Many suppose it to be meant by the Creator as the Air Crab; and adapted to the light element, in the same proportion as the Sea Crab is adapted for the water.

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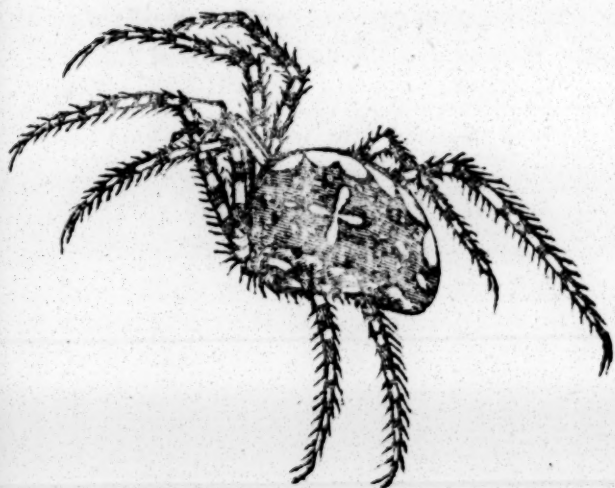
GENUS VIII.

A R A N E A.

*Character.*

**T**HIS Insect has eight feet, as many eyes, a mouth armed with two crotchets, two spiral tongues; and the bottom of the abdomen has two instruments, like nipples, adapted for spinning.

ARANEA.



## A R A N E A   D I A D E M A .

## THE DIADEM'D SPIDER.

OF these Insects there are many different species ; but the most beautiful is that we have delineated, as above. That which mostly distinguishes the Spider, is the manner of forming its web : she first chooses a place where there is a cavity, that she may have a clear passage, to pass

pass freely on each side, and to escape occasionally. She begins, by dropping on the wall some of her gum; to which she attaches her first thread, which lengthens as she passes to the other side, to which she fixes the thread in a similar manner: thus she passes and repasses, from side to side, until she has made what may be termed the warp of her web, exactly the size she intends it should be, or which she thinks will answer her purpose of preying on the passing fly. It is observed that, in order to finish her work the sooner, she spins several threads at one time: after thus finishing, she then crosses her work with threads, in the same direction as the weaver throws the woof with his shuttle. To prevent her being seen, she weaves a small cell in the web, where she lies, unobserved, until the tremulous thread informs her of some prey being entangled in her toils: she then darts along the line, and seizes the victim, then devoted to destruction. Many superficial observers of Nature have wondered from whence the Spider could be supplied with the gum she uses in the many webs she is obliged to make, or repair: they never reflected, that the same Providence which knows the Spider is hated, and that her web is  
always



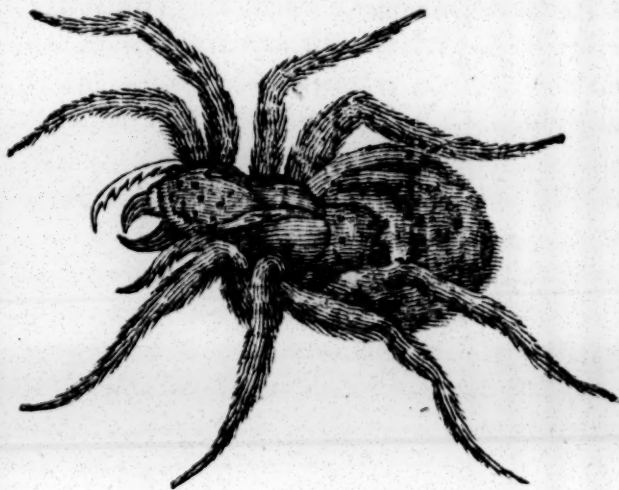
always in danger of injury, could furnish her with a magazine of both gum and thread, for such exigencies; and that when the magazine was exhausted, it could, by the same means, be replenished. However, it must be admitted the recruits fail in time; for when the Insect grows old, it is deprived of its weaving materials: it is therefore obliged to depend on the generous compassion of the young Spider, who will frequently resign its own web to the infirm Insect, and weave for itself another.

The web of the Garden Spider differs almost as much from the web of a House Spider, as a net does from a close-weaved piece of cloth: but it is, perhaps, more curious in its formation. They greatly resemble a wheel, that has bars crossing the spokes at equal distances. These spaces are in proportion to the size of the prey the Spider designs shall not pass through them. Being too small for large flies, moths, butterflies, &c. to pass through, with their expanded wings, such generally fall the victims of the Spider, whenever they unknowingly fly against its web,

Having

Having given this general description of what is most extraordinary in the Spider, we shall now say a few words on the *Aranea Diadema*, or the Diadem'd Spider. This Insect grows very large. The upper part of its belly is most beautifully embellished with black and white dots and circles: in the middle of them is a band, composed of oblong-shaped spots, of a pearl colour; resembling, in their arrangement, the fillet of an Eastern King: the ground of this fillet, when viewed in the sun, through a glass, is perhaps one of the richest and most splendid spectacles Nature has to exhibit, in all her tribe of Insects. The eyes are eight in number, sparkling, and placed on the crown of the head: the legs are long, yellow, encircled with dark brown, and furnished with bristles. This most extraordinary Insect has been found in Kew-Gardens.





## THE TARANTULA.

THIS Insect being of this Genus, and much resembling a House Spider, we shall close our brief System of Insects, with a few words on this extraordinary animal. The bite of it, in hot countries, producing the most astonishing effects, naturally first arrests our attention. The quantity of the poison emitted into the wound, is too incon-

inconsiderable to render it immediately perceptible; but, as it ferments, it causes, in about five or six months, the most frightful disorders. The person bit, at this time laughs and dances incessantly, is all agitation, and assumes a most extravagant species of gaiety; or else is afflicted with a most dismal melancholy. At the return of the period when the bite was given, the madness renews; and the distempered party repeats his former inconsistencies, by fancying himself a king, or a shepherd, or some other character, according as his shipwrecked reason is driven against the rocks of absurdity. He has no regular train of thought: all his mind and feelings are but a chaos of wildness and extravagance. Sometimes these unhappy symptoms will continue several years, until death relieves the sufferer. Those who have been in Italy, where the natives are frequently afflicted with this malady, tell us, the only cure is music, from such an agreeable and sprightly instrument as the violin, which is, therefore, one of the most common species of music in that country: no village, or cottage, scarcely is without it. The tune is chosen according to the natural temper and disposition of the patient: this is discovered by

by playing several tunes, until the unhappy sufferer, by his gestures, 'shows that one is found agreeable to his fancy: this is thought an infallible sign of a cure being effected. The patient immediately begins to dance, and rises and falls in concert with the modulations of the tune. This is continued until he begins to perspire, which instantly causes an external evacuation of the venom. In this manner are those afflicted with the bite of a Tarantula, cured. But, is it not an extraordinary instance of Providence, that instrumental music should have attained so great and general a perfection as it has in Italy, where it is necessary to preserve the lives of the natives, who would otherwise frequently die from the bite of this baneful and venomous Insect?

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THE Z I M B.

HAVING observed the following curious account of the Zimb, extracted from the Travels of the ingenious Mr. Bruce, by the Editor of the Monthly Review, with that taste of selection, and accuracy of insertion, which so justly distinguish his judicious arrangement of that periodical

periodical publication; we could not refrain from copying it, as a most valuable addition to our small Compendium of Natural History.

This Insect is called the Zimb, or Tzalsalya. It is a little larger than a Bee; with wings of pure gauze. The head is large; the upper jaw sharp, and furnished with a sharp-pointed hair, about a quarter of an inch long: the lower jaw has two of these pointed hairs; and the three, joined into one pencil, make a resistance to the finger, nearly equal to that of a hog's bristle. As soon as this winged assassin appears, and his buzzing is heard, the cattle forsake their food, and run wildly about the plain, till they die, worn out with fatigue, affright, and pain. The inhabitants of Melinda, down to Cape-Gardefan, to Saba, and the south coast of the Red Sea, are obliged to put themselves in motion, and remove to the next sand, in the beginning of the rainy season: this is not a partial emigration: the inhabitants of all the countries, from the mountains of Abyssinia, northward, to the confluence of the Nile, and Astaboras, are, once in a year, obliged to change their abode, and seek protection in the sands of Beja.

The

The elephant and rhinoceros, which, by reason of their enormous bulk, and the vast quantity of food and water they daily need, cannot shift to desert and dry places, are obliged, in order to resist the Zimb, to roll themselves in mud and mire, which, when dry, coats them over like armour.

Of all those who have written of these countries, the Prophet Isaiāh alone has given an account of the Zimb, or Fly, and described the mode of its operation. Isaiāh, chap. vii, ver. 18 and 19. Providence, from the beginning, it would appear, had fixed its habitation to one species of soil; which is a black, fat earth, extremely fruitful. And, contemptible as it seems, this Insect has invariably given law to the settlement of the country; it prohibited, absolutely, those inhabitants of the black earth, called Mazaga, housed in caves and mountains, from enjoying the help of labour of any beasts of burden. It deprived them of their flesh, and milk, for food; and gave rise to another nation, leading a wandering life, and preserving immense herds, by conducting them into the sands, beyond the limits of the black earth,



earth, and bringing them back when the danger from this Insect was over.

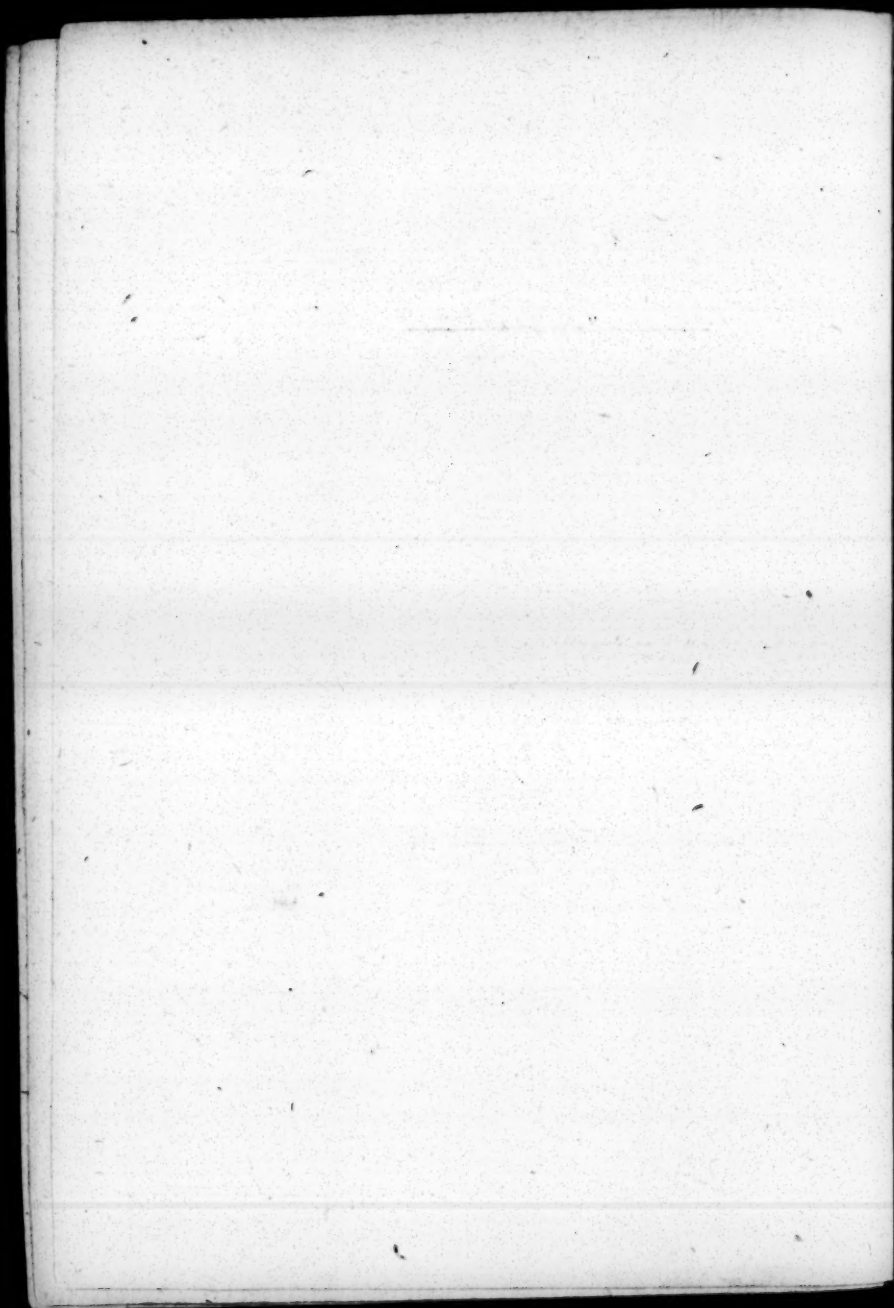
In the plagues brought on Pharoah, it was by means of this Insect that God said he would separate his people from the Egyptians. The land of Goshen, the possession of the Israelites, was a land of pasture, not tilled, nor sown, because not overflowed by the Nile; but the land overflowed by the Nile, was the black earth of the valley of Egypt: and it was here that God confined the Zimb; for he says, It shall be a sign of this separation of the people, which he had then made, that not one Fly should be seen in the sand, or pasture-ground, the land of Goshen. And this kind of soil has ever since been the refuge of all the cattle emigrating from the black earth, to the lower part of Albara: so powerful is the weakest instrument, in the hands of the Almighty.



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A  
CONCISE DESCRIPTION  
OF THE  
MOST VALUABLE AND CURIOUS  
TREES, SHRUBS, &c.

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A CONCISE  
DESCRIPTION, &c.

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IN this part of our Natural History, which we have devoted to the subject of Trees, we have selected those of foreign production with which we are most interested, from their being the first objects of our commerce, and the most valuable of our exotic delicacies. Under this head of Trees, we mean to treat of such Plants and Shrubs as are particularly deserving the attention of our young students, whether designed for the senate, closet, counting-house, or counter.

F -

COFFEE

## C O F F E E   S H R U B.

**T**HE Coffee shrub grows in Arabia-Felix, and is brought from Mocha: the flower resembles the Jessamine; and the leaf, that of the Bay-tree. It is propagated by seeds, and grows to the height of eight or ten feet. The twigs and leaves rise by pairs: the leaves are two inches broad in the middle, from whence they decrease to a point at each extremity. As this tree will not thrive when transplanted, unless kept in mould, it has been found very difficult to rear it in distant climates: but this inconvenience has, by attention and perseverance, been so considerably diminished, that it is now cultivated, with the most promising success, in the West as well as the East Indies.

The fruit hangs on the twigs, by a foot-stalk, containing one, two, or more, in the same place. These shrubs are watered by artificial channels, like other vegetables; and, after three or four years bearing, the natives plant new shrubs, in consequence of the old beginning  
then

then to decline. They dry the berry in the sun, and afterwards divest it of the outward husks, with hand-mills. In the hot seasons, they use these husks, roasted, instead of the Coffee berries; and esteem the liquor impregnated with them more cooling.

The Coffee berries are generally ripe in April: they are esteemed, as being of an excellent drying quality, comforting the brain, easing pains in the heads, suppressing vapours, drying up crudities, preventing drowziness, and reviving the spirits.



## T E A   S H R U B.

**T**HE Tea shrub grows plentifully in several parts of the East-Indies, and affords a leaf which is too well known, according to the opinion of our physicians, in every country in Europe. It is brought from China, Japan, and Siam. The leaves are gathered in the spring; and bear a flower of five leaves, resembling a rose: to these succeed a cod, like a hazel-nut. The Tea shrub flourishes equally in rich and poor ground. The leaves are dried and parched by fire; in which state they are sent to Europe, and other parts of the world. The best Tea is that which is the greenest, best scented, and most free from dust. The cause of Tea being so much drunk in Europe, is said to be from the Chinese bartering it for our Sage, which they esteem as possessing the most invaluable qualities. This is not improbable, from our physicians having a Latin proverb, respecting Sage of Virtue; which asks, Why will a man die, with Sage in his garden? Although Tea is drunk more for pleasure than for any medicinal purpose, it is justly allowed to possess many salutary qualities.

COCOA-



## C O C O A - T R E E.

THIS Tree, bearing the Cocoa or Chocolate nut, resembles our Heart Cherry tree; except that, when full grown, it is much higher and broader. It has abundance of leaves, similar to those of the Orange-tree. It flourishes throughout the year, especially near the summer and winter solstices. As the leaves perpetually replenish themselves, this tree is never disrobed of its verdure. The blossoms are small, regular, and like a Rose, but scentless. Every blossom is joined to the tree by a slender stalk; and leaves, in falling, long green filaments; which produce a pointed, yellow fruit, of the size of our Melons: these adhere to the thick branches, without any intermediate stem; as if Nature thus providentially provided it a support strong enough to bear the greatness of its weight, when grown ripe, and to its largest size. Each fruit contains from between 15 and 25 small nuts, or almonds, covered with a thin yellow skin; which being separated, a tender substance appears, divided into several unequal particles, that, although sharp to the palate, are nourishing to the constitution.

These trees grow in all the Spanish West-Indies, Jamaica, &c. where they commonly produce fruit every seven years at most, after the first planting : but, in the interim, they are sometimes twice or three times removed; when great care is taken to secure them, with such shade as may preserve them from the intense heat of the sun. Being once reared, they are not liable to this injury; and, therefore, the precaution being no longer necessary, is discontinued; for, being ranged in rows, with shady Plantains, they are both mutually sheltered by each other from the parching sun, and boisterous winds. It is a tree of singular beauty, profit, and utility. Its large, broad, and green leaves, hang like so many shields, as if to defend the tender and valuable fruit from injury. As the fruit adheres to the large branches, the tree appears as if most beautifully studded, from the root to the most large and expanding branches.

The Cocoa-nuts, affording to the Indians and Spaniards food, raiment, riches, and delight, are received in payment, as currency.

It is unnecessary to add, that, from this extraordinary tree, that wholesome beverage Chocolate is made, in such quantities as to supply the greater part of the world with a liquor distinguished for its nutritive and restorative qualities.

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### THE SUGAR-CANE

**I**S the produce of Barbadoes, Jamaica, Nevis, &c. This plant bears on each joint a cane, five or six feet high, and adorned with long, strait, green leaves, similar to Flags, or Fleur-de-Lis. On the top they have a plume of silver-coloured flowers. The canes contain a porous substance, of which the sugar is made. When they are mature, the canes are cut off, at the first joint from the ground; and are laid in heaps, like our sheaves of corn in harvest-time: being cleared from their leaves, they are tied in bundles, and carried to the mills, which press out their juice: this is put into boilers, in order to evaporate the watery particles, so as to let nothing but the sugar subside. The sugar is then cleared, by a mix-

ture of ingredients, adapted to the purpose of fining and preparing it for graining. While it is boiling, the scum, which rises in great quantities, is clearly taken from the surface, until the sugar is ready to be emptied into the coolers; from whence it is again shifted into earthen pots, with holes in their bottoms, which drains the molasses into other pots, placed beneath: the latter is an entire month in separating itself from the sugar; which is then put into casks, or hogheads, for transportation. The Sugar-cane, in England, is so tender as not to admit of being reared without artificial heat. It is, however, preserved as a great curiosity, in the gardens of those who keep hot-houses, for the purpose of having such curious and exotic productions of Nature.



## THE NUTMEG AND MACE TREES.

**N**UTMEGS are distinguished by the sexual difference of male and female ; but the latter is the most useful, and therefore most valuable. The male is long, and large; the female is round, and small, which only grows in improved or cultivated lands: while the males, growing spontaneously in woods and forests, are called by the Dutch, the Wild Nutmegs. The tree which produces the female, or best Nutmeg, is as large as a Pear-tree, and has leaves shaped like those of the Peach. The blossom has a pleasant odour, and resembles the rose. The flower being fallen, a fruit appears, as large as a green walnut: in this is a kernel, which is the Nutmeg. It has two barks: the first is very thick, and is taken off when the fruit is ripened; the other is thin, and of a reddish yellow. When separated from the Nutmeg, it is dried, and called *Mace*. The Nutmegs being divested of their bark, are dried and preserved.

The Nutmeg-trees grow plentifully in the Asiatic Island of Banda, and in several other islands in that part of

the East-Indies which belongs to the Dutch, who are the sole possessors of this produce. It is said those islands so abound with Nutmeg-trees, as would appear incredible to relate: and the climate is so fertile, and so congenial to their nature, that they produce three crops annually, in the months of April, August, and December.

According to Tavernier, this tree is not planted, but grows by means of certain birds, which swallow the fruit whole, and afterwards void it, in its perfect state, but covered with a viscous or gluey matter. Being thus prepared for vegetation, they take root wherever they fall, and produce the trees above mentioned.



CINNAMON-

## C I N N A M O N - T R E E.

**T**HIS tree affords a bark, which is the Cinnamon, so well known as one of the most valuable of the spices consumed in Europe. The tree itself is about the height of the willow: it bears little blue cups, which are odorous; and are succeeded by the fruit, resembling the olive.

This tree grows spontaneously in the Island of Ceylon, which is possessed by the Dutch. There are nine or ten sorts of Cinnamon: the best grows in the greatest plenty, and is the peculiar produce of that Island. The natives call it *Rasse Coronde*, i. e. Sharp, Sweet Cinnamon. The Dutch East-India Company export it annually, under the strictest orders of no other Cinnamon being mixed with it. Every sort of Cinnamon-tree must grow a certain number of years, before it is stripped of the bark. These growing in vallies, of a white, sandy soil, will ripen in five years; while others, found in a wet, slimy soil, will be at least seven or eight years before they can be stripped: and such as grow in the shade of larger

F 6

trees,



trees, are not only later, but produce a bark not so sweet or agreeable as the more early Cinnamon-trees. The bad Cinnamon tastes bitter, and smells like camphire. The sweetness is entirely owing to a thin membrane, which adheres to the inside of the bark. The flavour diffuses itself through the whole substance, while the Cinnamon is drying in the sun. The fragancy of the smell, and the sweetness of the taste, have caused this spice to be coveted by all nations. The bark may remain on some trees, 14, 15, or 16 years, without suffering any material diminution in its qualities: but after this period, the taste and smell decrease, and approach to those of camphire. The Cinnamon stripped from trees that are too aged, may be known by its being thick, and consequently flat; from the sun not having the power of warping it in the drying. The amazing quantities imported into Europe, and other parts of the world, are falsely said to be produced by the trees barking again, in four or five years: the real cause is, that the trees, being cut down to the ground, sprout branches, which grow, and ripen, so as to produce bark in five, six, seven, or eight years. A species of dove, likewise, con-  
tributes

tributes greatly to the considerable produce of Cinnamon. These doves are called *Cinnamon-eaters*, from eating vast quantities, and dispersing its fruit over the fields, for the subsistence of their young. Thus is the vegetation of the Cinnamon-tree extended over the whole Island.

The oil drawn by fire from Cinnamon, is esteemed as one of our first cordials. The camphire, which is extracted from the root, is a most useful and valuable medicine. Oil of camphire is very costly; not so much from its scarcity, as from its medicinal efficacy. In a word, there is no part of the Cinnamon-tree but is useful.



## CLOVE-TREE.

**T**HIS tree produces a flower, the foot-stalk of which is what we call Cloves. The fruit, when ripe, is of a dark brown. The trees grew most plentifully in the Molucca Islands, until the Dutch pulled them up, to prevent the produce being shared by the English, and other nations. They were then transplanted to an Island called Ternati, which was in the entire possession of the Dutch. Thus every other people is obliged to purchase from them this valuable merchandise.

The Cloves are only pulled from the trees, spread in the open fields, and thus dried in the sun: the only care that is afterwards required, is to preserve them from the air. Some authors describe the Royal Clove, so called from bearing on its top a crown; which is one reason of the King of this Island keeping it in his own possession; and from the fabulous opinion, that the other trees bow to this, as their sovereign.

**PEPPER-**

## PEPPER-TREE.

THE fruit of this tree is the Black East-India Pepper: it grows in the manner of a climbing vine or creeper, and produces the fruit in small clusters like our currants. The ripe seeds are about the size of a large currant, which turns, in drying, from a red to a black colour. It is said the common White Pepper is only the Black stripped of its outward skin, which is effected by steeping it in sea-water, then drying and rubbing it in the sand. There is, however, a natural White Pepper possessing all the qualities of the Black. Three sorts of Black Pepper are brought from the East-Indies by the English and Dutch, which only differ in the places from whence they are brought: the finest comes from Malabar. The tree or bush bearing the Jamaica Pepper grows nearly like the Barberry, except not being so high, and having no prickles. The berries resemble those of the Juniper, possess an aromatic taste, which, partaking of those of all other spices, has caused the English to call it *All-spice*. This Pepper grows plentifully in many of the plantations in Jamaica.

## GINGER PLANT.

**T**HIS plant is called the Club-reed; from the root of which is the Ginger, which, at the end of every root, is in form like a foot. The leaves of the plant are long, large, and of a deep green: and the whole flower resembling a club, has caused it to be called by some the *Club-reed*, and by others *Ginger with a club flower*. Ginger consists of one sort which is white and mealy, and another which is black and hard: the first is the most esteemed. Both the East and West Indies produce Ginger: in the Antilles it is greatly cultivated: but the greatest quantities are imported from the leeward Islands of Barbadoes, Nevis, St. Christopher, and Jamaica. Little is now brought from the East-Indies, except what comes as confectionary, and is called Green Ginger, which they prepare in India. Some indeed is prepared in England and other parts, by steeping the fresh roots two or three days in warm water, keeping it all the time in a balneo, which swells and softens it. It is then boiled, either slit or whole, with refined sugar, until it becomes a syrup.

CURRANT

## CURRANT VINES.

THIS Vine grows most plentifully in a spacious plain near the fortress of Zant in Greece. It produces those Currants which are called the *Corinth Grape*, vulgarly *Currants*, and are sold by our grocers for cakes and puddings. They consist of three sorts, the red, black, and tawny. The Vine itself is low, has thick indented leaves, and is furnished like other vines with clasps at the joints. These little grapes, which grow in bunches, ripen in August, when the people of Zant gather, stone, and dry them. They are then carried into the town, and deposited, through a hole, in the grand magazine called the Seraglio, where they are pressed in so compact a mass, that it is afterwards obliged to be cut with an iron instrument, in order to pack them in casks and bales for exportation. These Currants are likewise brought from several parts of the Levant: but the sort we mostly use, comes from the islands near the Morea. The people near Zant suppose we use them in dying instead of eating. The raisins sold also by our grocers are grapes from vines growing in this country,

country, and which are dried and packed in a similar manner to the currants, but with the difference of their not being stoned. Some indeed assert that, before they expose these vine branches to dry in the sun, they are first dipped into a certain liquor prepared for the purpose.

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#### POMEGRANATE-TREE.

**T**HIS tree grows both wild and cultured. The branches of the first are small, angular, and armed with thorns. The bark is red, the leaves small, like the myrtle; and the flower is large, of a beautiful garnet, and composed of several leaves representing a little basket of flowers. The cup is oblong, purplish, and in form like a bell. From this blossom is produced a fruit, which grows into a large round apple with a thick, smooth, brittle rind, adorned with a purple cup. This apple is called the Pomegranate, which is too well known in our elegant desserts to require a particular description. The wild Pomegranate is only produced in hot countries. The juice of the Pomegranate is much valued in medicine. Of this tree the English reckon



five sorts, which are cultivated more for ornament than utility. They consist of the common, sweet, wild, double-flowered, and American dwarf Pomegranate. The first of these is the most common in this country, which, with care, has been known to afford fruit that has ripened tolerably well in warm seasons: but as they ripen late, they are seldom well tasted, of our produce. The double-flowered, continuing its beautiful bloom for near three months, is esteemed by our Nobility and Gentry as the most valuable flowering tree yet discovered.

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#### RICE PLANT.

THIS plant is much cultivated in the East, and produces the grain so much consumed, which is called Rice. Although a native of the East, great quantities of it have been reared in South Carolina, where it is found to succeed as well as in its original soil: and it being a grain that from its use may be called the manna of the poor, it has proved most beneficial to that province. The plant bears its stalk to the height of three or four feet, and is much thicker  
and

and stronger than that of wheat or any other corn. The leaves are long like those of the reed, and the flowers blow in the top like barley : but the seed grows in clusters, and is enclosed in a yellow husk ending in a spiral thread. This plant growing in moist soils, where the ground can be overflowed with water, such as are desirous of cultivating it in England should place the plants, reared in a hot-bed, in pots filled with rich light earth, and placed in pans of water, which should be plunged in a hot-bed, and replenished as the water is by the heat diminished. In July they should be openly exposed, but in a warm situation, and with the same watery nourishment. Towards the latter end of August they will produce their grain tolerably ripened, if the autumn should happen to be favourable. Although Rice be chiefly used for food, it is sometimes used in medicine. It nourishes well, stops fluxes, and is therefore found extremely serviceable in armies. As it increases blood, it restores in consumptions. The newest Rice should be chosen, and such as is large, white, and well cleansed.

## CORK-TREE.

OF this tree there are several species. The chief are the broad-leaved, the evergreen, and the narrow-leaved with smooth edges. The first is only requisite to be described, which is always green, of a moderate height, resembling the Oak, and having a thick, light, spongy bark, of an ash colour, which is first taken from the tree, and afterwards separated from an inner bark. The leaves, cups, or acorns, resemble, like the form of the tree itself, those of the Oak. It grows in Italy, Spain, and especially towards the Pyrenees and in Gascony, &c. The inhabitants of these countries, when desirous of making a crop of this produce, strip the bark from the top to the bottom of the Cork-trees, and pile them to a reasonable height in a pit or ditch filled with water. Having loaded these heaps with weights, they leave them until they are thoroughly soaked and straitened; then they are removed to another ditch, and from thence to a third and a fourth. They are next taken out of the water, dried, and packed in bales for exportation. To choose the best Cork, the finest boards that are free  
from

from knots and chinks; of a moderate thickness, yellow on both sides, and firm in texture, should be selected. This best sort of Cork is called the White Cork of France, from its being chiefly produced about Bayonne in the province of Guienne. From the same part is brought a sort which is called the Spanish Cork, which seems as if it had been burnt: but its blackness is said to be caused merely by having been steeped in sea-water instead of fresh water. The inside is, however, yellowish, and easily cut. Of this the thickest should be chosen.



TOBACCO

## TOBACCO PLANT.

OF this production there are five species : the first is the Oroonoko, of which there are two sorts; the one has very broad, rough, roundish leaves; while the leaves of the other are narrow, smooth, and pointed: but neither of them is valued by the planter, in consequence of their not being much consumed in England. The second sort is called the Sweet-scented Tobacco, from its affording, when smoked, a most agreeable scent: this sort is much cultivated in Cuba, Brasil, Virginia, and several other parts of America; from whence it is brought to most parts of Europe, but especially to England, where its general culture is prohibited, lest the revenue should be diminished. The third sort is the greater narrow-leaved perennial Tobacco, imported from the French settlements in the West-Indies into the Royal Gardens at Paris, where it is cultivated in small quantities for the making of snuff. The fourth and fifth sorts are preserved in Botanic Gardens, less for use than for variety.

Tobacco

Tobacco is raised from seeds sown in a rich ground, where the rising plants are covered, to defend them from the sun : in the rainy seasons they are transplanted into large pieces of ground that are cleared and prepared for the purpose. The distance of the rows in these plantations is about two or three feet, or such a distance as will not admit of their extending leaves touching, which would cause them to rot, by corrupting each other. The Tobacco being thus transplanted, they only require to be weeded, until the flower-stems appear, when they cut off the tops in order to afford more nourishment to the leaves : the leaves hanging on the ground are likewise pulled so as to let remain about ten or twelve upon each stalk, which causes a great increase. The leaves, when ripened, are cut and spread upon the ground : they are then strung upon certain cords in little knots, at such distances as the plants may not touch one another : they are next hung to dry in the air in a situation guarded from the wet, during fifteen or twenty days. When sufficiently prepared, they are made into such forms as the purchaser desires.

COTTON

## COTTON PLANT.

THE fruit of this plant is the Cotton which is so much used as a material of manufactures chiefly made at Manchester. Its plant bears a stalk about eight feet high, covered with a reddish hairy bark, divided into several short branches. The leaves are rather less than those of the Sycamore; they are shaped like those of the Vine, and are suspended by small stalks adorned with a nap or hairy substance. The flowers are fine, large, and numerous, of a yellow colour mixed with red or purple, and shaped like a bell: the flower is succeeded by a fruit as large as a filbert, which, being ripe, opens into three or four partitions, where the Cotton is found as white as snow. Heat swells each flake to the size of an apple. There is another sort of Cotton-tree that differs from the former in size; for this grows to four or five feet high: the flowers and fruit are like the former. Both these sorts grow in Egypt, Syria, Cyprus, Candia, and the Indies. In Jamaica, Barbadoes, and other parts of the West-Indies, the Cotton plants grow to a tolerable height, and spread



on every side its branches: it has small, green, pointed leaves, and bears a yellow flower resembling in form the rose of the sweet-briar. The fruit is as large as a tennis ball, and has a thin crusty shell, of a brown or blackish colour. In these are found the Cotton. In some of the American plantations there are Cotton bushes very like those of Egypt, Arabia, &c.

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#### MANDRAKE PLANT.

**T**HIS plant is of two species: one is the common, and has a round fruit called the Male Mandrake; the other has a purple flower, and is called the Female Mandrake. The leaves of the former rise immediately from the root, and are about a foot long, and broader than a man's hand, of a smooth surface, a deep green colour, and of a disagreeable smell. The flowers of both are shaped like a bell, which leave a soft globular fruit containing many seeds, shaped like a kidney. The root, according to some naturalists, represents the lower parts of a man, and is therefore called *Anthropomorpha*, which, in Greek, signifies the figure of a man. But  
this

this feigned resemblance of the human form is only devised by the cunning of quacks and impostors, who deceive the ignorant by forming the fresh roots of Briony and other plants into these resemblances. There is likewise another ridiculous fable devised respecting this plant; which is, that as it is certain death to those who root it from its parent mould, the stem is tied to a dog's tail, and thus is it taken from the earth in order to prevent the above disaster happening to any of the human species. The report of the Mandrake crying like a child, when torn from its soil, is equally false and ridiculous; for many of this plant have been removed without any other effects than those attendant on the removal of all deep-rooted vegetables. But what deserves credit relative to the Mandrake is, that the roots will remain sound above fifty years, and retain all the vigour of the most youthful plants: they should never be removed after their roots have arrived to any considerable size, lest the lower fibres should be broken, and thus the growth of the plant be diminished, and its strength debilitated; if thus injured, they will not recover their former vigour in less than two or three years. Both the Male and Female Mandrake grow in hot climates,  
and

and are mostly found in plains. They are propagated in gardens by seeds, which should be sown upon a bed of light earth soon after they are gathered. In this situation they should remain until the latter end of August. Having kept them during this time free from weeds, they should be transplanted into the places for their future vegetative existence. The soil of these should be light and deep, in order to admit the roots penetrating so low into the earth as they are by nature formed to fix themselves. Thus transplanted, they will produce great quantities of flowers and fruits for a series of years. The Mandrake is mentioned in the thirtieth chapter of Genesis, where Reuben is said to have found one in the field during the wheat harvest: it being said in the Canticles, "The Mandrakes give a smell, and at our gates are all manner of pleasant fruit," seems as if the fruit of the Mandrake was delightful in smell; for surely Solomon must mean a grateful smell, otherwise he would never have chosen it as an embellishment of a pastoral song. However, the Mandrake known to us at present has no such delightful quality as to render it so valuable as to cause a woman to exchange her husband, as Rachel did, for one of them.

BALM

## BALM OF GILEAD.

FROM the trunk of this plant flows a white liquid balsam, which bears the name of the vegetable. The plant bears leaves like rue; and white, starry flowers, which produce, in their middle, berries enclosing a small kernel. When the balsam first runs, it is of the consistence of oil of sweet almonds; but age causes it to resemble turpentine; when it loses great part of its perfume, and turns rather blackish. When fresh, the smell is most agreeably aromatic, and the taste like citron-peel. Jericho was the only place where this balsam was to be found: but, since the Turks have possessed the Holy Land, these shrubs have been transplanted into the gardens of Grand Cairo; where they are guarded, during the flowing of the balsam, by the Janissaries. At this time it is very difficult for the Christians to obtain a sight of these balsams. With respect to the balsam itself, it is almost impossible to obtain any, unless from an Ambassador, who may have some sent him, as a present,  
from

from the Grand Seignior, or from the soldiers appointed to guard this valuable liquid. This circumstance plainly evinces, that the balsam sold here, can only be the **White Balsam of Peru**; which is prepared with spirit of wine rectified, or with some distilled oils. Mr. Pomet says he received, from a friend, the present of an ounce, which he brought from Grand Cairo. He describes it to have been of a solid consistence, like the turpentine of Chio, of a golden colour, and a citron smell.

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#### CEDAR OF LIBANUS.

**T**HIS tree is very large, thick, and strait: the leaves are slender, and much narrower than those of the Pine-tree: they are disposed in clusters along the branches; upon the upper part of them grows erect the fruit, like our pine-apples; but they never drop in a whole state. It is said there issues from the trunk, in the warm months, a sort of white resin, which is very clear, of a grateful odour, and is called Cedar gum: the large trees are said to afford no less than six ounces per day of this substance.

The

The cones of the Cedar, if preserved entire, will contain their seed for several years. They ripen most commonly in the spring, and are nearly twelve months old before they arrive to us from the Levant. To manage the Cedar plant, we refer our readers to Miller's directions, in his Gardener's Dictionary.

What is mentioned in Scripture, respecting the lofty Cedar, cannot be applied to this tree; which, instead of rising in height, is more inclined to extend its branches in breadth. Mr. Maundrel observes, that when he visited Mount Libanus, he only found sixteen large Cedars remaining; but that there were several young trees, of a smaller size. One of the largest he found to be twelve yards six inches in circumference, and thirty-seven yards in the spread of the boughs. At above five or six yards from the ground, it was divided into five limbs, each being as large as a great tree.

Cedar is said to be proof against the putrefaction of all worms, or animal bodies. The saw-dust is thought to be used by those mountebanks who pretend to have the  
secret

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secret of embalming. The wood is said, likewise, to yield an oil which preserves books and writings.

My Lord Bacon asserts, that Cedar will continue sound a thousand years. Of this wood it is needless to observe that the timber work of that glorious structure the Temple of Jerusalem was formed.

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## A N A N A   P L A N T.

**F**ROM this plant is produced a species of Pine-apple that is reckoned, from its richness of flavour, the king of fruits. It has the delicious tastes of the peach, quince, and muscadine grape, united. The top of it is adorned with a little crown, and a bunch of red leaves, like fire. When the crown falls, which is thought to be an emblem of its royal excellence, another succeeds, possessing all its predecessor's qualities. The plant is herbaceous, and has leaves somewhat resembling those of the Aloe. The fruit, which is like the cones of the Pine-tree,



tree, is supposed to have been the cause of its name. The place of its nativity is not determined: it was, however, first brought from the East-India factories, and planted in the hottest islands in the West-Indies, where it succeeded so well, as to afford now a most plentiful produce. It has lately been introduced, with success, into the European gardens. The first person who succeeded in this attempt, was Mons. Le Cour, at Leyden, in Holland. From him, our gardens in England were first supplied with this royal fruit. From its juice, is made a wine, almost equal to Malmsey sack; it will, likewise, intoxicate as soon as the strongest juice the grape affords.



## GREAT AMERICAN ALOE.

**T**HE Aloe is a plant, which has leaves thick, and armed on the edges with spines. The flower consists of one leaf, which has six parts at the top, like the Hyacinth: the fruit is oblong, and divided into three cells; in which are inclosed flat and semicircular seeds. In the curious gardens of Botany in England, there are near forty different sorts, which are natives of both the East and West Indies: but the most curious Aloe is brought from the Cape of Good Hope. Most of the African Aloes produce flowers with us annually, when grown to a sufficient size, which is often in the second, and seldom more than the third or fourth year after planting from off sets: but the American Aloes, which produce their flower-stems mostly from the centre of the plant, seldom flower until they are of a considerable age, and then but once during the life of the plant; for the flower-stem, shooting to so high a stature, draws from the centre such a quantity of nourishment as to render the leaves irrecoverably decayed: and when the flowers are full blown, scarcely any of the leaves remain

remain alive : but whenever this happens, the old root shoots a numerous quantity of off-sets, by which these plants are not only preserved, but considerably increased.

The accounts of this plant are, like those of many others, rather fabulous. That of its blooming only once in a hundred years, and making a report like a gun, are equally false; for many American Aloes have been known to bloom in much less time. In the year 1729, a great American Aloe flowered at the age of forty years, in a garden belonging to Mr. Cowell, at Hoxton : and of a later date, some have been known to bloom at the distance of twenty years.



G 2

SENSITIVE

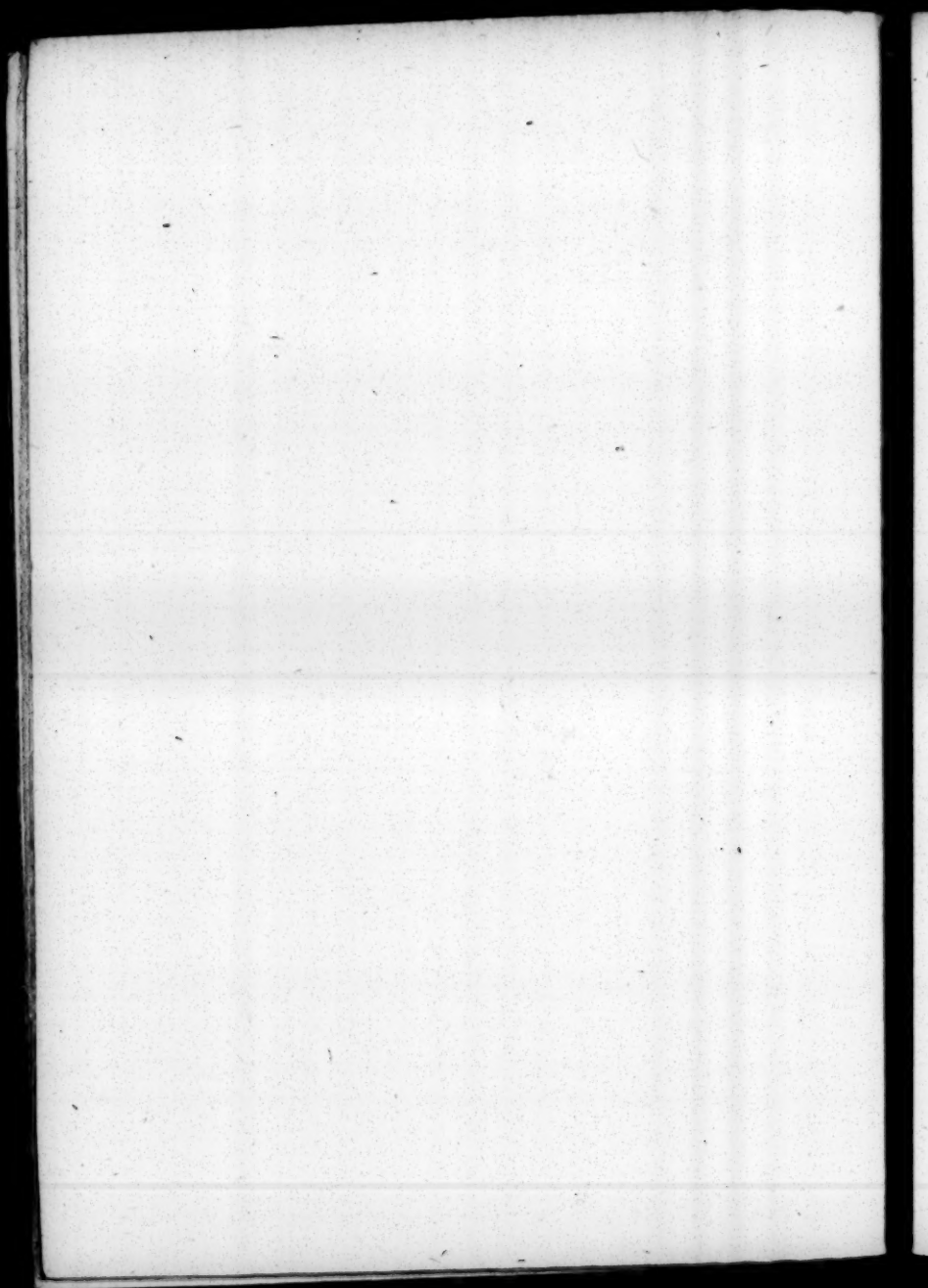
## SENSITIVE PLANT.

**T**HIS plant is very surprising in its contexture, and has caused much investigation among the naturalists, to account for the contraction of its leaves when any of them are touched. They close themselves by pairs, joining their upper superficies together. Aqua-fortis being dropped on the sprig between the leaves was found to cause them to close by pairs successively to the top of each sprig, and to continue in this state some time: but the next day the leaves on two or three sprigs were again expanded, except those on that where the aqua-fortis had been dropped, being withered from the place upwards, although they continued green downwards. A pair being suddenly cut off with scissars, the next pair above and below immediately closed, and after a little time all on the same sprig followed the example, which extended even to those on other sprigs. One of the harder branches being cut, emitted a liquor, which was very clear, and of a bright-greenish colour, bitter in taste, and somewhat resembling

sembling that of liquorice. The above experiments were made by Dr. Hook on some Sensitive Plants growing in a garden in St. James's Park.

In the passage of the isthmus from Nombre de Dios to Panama, in America, there is related to be a whole wood full of Sensitive Plants, which, being touched, close their leaves with a rattling noise, and thus twist themselves into a winding figure.







T H E  
S C I E N C E O F B O T A N Y  
B R I E F L Y E X P L A I N E D .

**T**O usher our Young Readers into this pleasing and instructive Science, we offer the following Compendium of Botanical Illustrations, to their attention, before they proceed to the study of the Flowers we have, in the following pages, shortly described.

Every science, except Botany, possesses a language peculiar to itself. Every person who has pretended to



teach, or explain, the nature of Plants, has chosen terms to express himself, according to his own caprice, or his particular style of observation. This arbitrary mode of treating Botany, has considerably bewildered the student; and even, sometimes, dissuaded him from pursuing the science with that avidity and pleasure he would otherwise have done. Although the vocabulary of Botany has been always subject to this variation, it has never experienced more innovation than of late years: but, notwithstanding we lament this deficiency of stability in Botanical language, we are happy to find that, sometimes, the alterations have been very judicious amendments of terms falsely used by the ancients: for the modern Botanists have named the plants, from the parts which they contain; while their predecessors have named them from outward appearance, or supposed qualities. Thus are the long terms, and denominations, which only perplexed the mind, and burdened the memory, abandoned. Conformably to this improvement, Linnæus proposed simple and proper terms, to express not only the different parts of Plants; but, likewise, their forms, qualities, situations, directions, and mode of existence, of each

part respectively. This method has, in general, been adopted by all succeeding writers in this science.

No method could be so proper for classing Plants, as that adopted by Linnæus; namely, from their sexual difference. This is most natural, and least subject to variation, from the differences being described according to the variation of the stamina in the male, and the pistils in the female parts of a plant.

According to modern Botanists, Plants are described as consisting of six parts: --- the Root, *Radix*; the Trunk, *Truncus*; the Support, *Fulcra*; the Leaves, *Folia*; the Flowers, *Flores*; and the Fruit, *Fructus*.

# I. RADIX---THE ROOT,

IS that part of the Plant which adheres to the ground, from whence it draws its nourishment.

Roots are either fibrous, bulbous, or tuberous.

*The Fibrous Root* is either perpendicular, horizontal, fleshy as the *Carrot*, hairy as the roots of *Grass*, or branching.

*Bulbous Roots* (among which are the *Snow-drop*, *Hyacinth*, and *Tulip*) are either solid, as the *Turnep*; coated, as the *Onion*; scaled, as the *Lily*; double, as the *Orchis*; or clustered, as the *White Saxifrage*.

*Tuberous Roots* are composed of many fleshy tubers, as the *Garden Ranunculus*; and either adhere closely to the stalk, or suspend from it by threads.

## 2. TRUNCUS---THE TRUNK,

**R**ISES immediately from the root, and sustains the branches. This part is called a Trunk in trees, and a Stalk in plants.

**STALKS** are either simple, or compound.

*A Simple Stalk* grows singly from the root to the top, as the Sun-flower; and is distinguished by its either being naked, leafy, upright (as the Lark's-spur), oblique, twining, pliant, reclining, lying on the ground (as the Nasturtium), creeping (as the Panfy), having roots as long as itself; living several years, or only one year; being woody, shrubby, cylindrical in form (as the Star-flower); having two, three, or more angles; and being streaked, furrowed, or channeled, smooth, rough (as the Aster), hairy, or prickly (as the Rose).

*A Branching Stalk* is one that shoots lateral branches, as it ascends, as the Wall-flower; and is distinguished by the branches being either irregular, large, numerous (as the Piony), supported, or prolific in leaves, fruit, or flowers (as the Lily of the valley, and the Jonquil).

*A Compound Stalk* is one soon dividing into branches, as the flower of Parnassus; and is distinguished by being either forked, having two ranges of branches, or having these ranges subdivided; tubular like a straw; being entire, branched, uniform, jointed (as a Pink), scaly, or with or without leaves.

## 3. FULCRA---THE SUPPORT,

**I**S that part which sustains or defends certain parts of a plant, and is divided into the following ten kinds; the leaf supporting the flowers, the tendril or clasper (as the Honeysuckle and Sweet-pea), the spine, the thorn, the footstalk of the leaf, the footstalk of the flower or fruit (as the Colombine), the general stalk, the gland, and the scale. Each of these have their subdivisions, which we omit as being too minute for the attention of young students.

## 4. FOLIA---LEAVES,

**A**RE divided into the three classes, of single, compound, and determinate.

**SINGLE LEAVES**, are those that have footstalks supporting only one, as the Cyclamen; and are described according to their circumference, border, surface, summit, and substance.

*Their*

*Their circumference and border* are either round, nearly round, oval, reversed oval, oblong, shaped like a wedge, angular, spear-shaped (as the Belvidere), narrow, shaped like an awl, triangular, deltoïde, or having four corners, quinqueangular or five-cornered, shaped like a kidney, a heart, a moon, an arrow, or a pike, divided into two or three parts, formed like a hand, pointed like a wing, jagged, indented (as the Tuberoſe), divided or not into parts, ſingly or doubly ſawed, notched, griſſy, ciliated or hairy like an eye-lid, lacerated, or ſeemingly torn or bitten, curled, or entire.

*Their ſurface* is diſtinguiſhed by being either downy, ſoft as velvet; hairy, as the Fox-glove; ſtinging, rough; ſmooth, as the Daiſy; briſtly, prickly, warted, poliſhed, plaited, waved, wrinkled; veined, as the Gilliſflower or Carnation; nerveſe; plain, as the Auricula flower; depreſſed, compreſſed, convex, concave, or channelled.

*Their ſummit, or top,* is either truncated, blunt, as if bitten, hollow, obtuſe, pointed (as the Amaranthus), ſhaped like an awl, or taper like a pillar.

*Their substance* is either hollow, fleshy, or membranous (as Pinks).

COMPOUND LEAVES are either simple or decompound.

*A compound leaf* is formed of several small leaves growing from one footstalk, and is considered as one whole, produced from a single composition, as the Ranunculus, Rose, Carnation, Pink, &c. They are either fingered, composed of two, three, or many leaves, resembling wings expanding from their common footstalk, and having alternate leaves, or being doubly winged.

*A decompound leaf* has a footstalk dividing twice or more times before it is garnished with leaves.

DETERMINATE LEAVES are distinguished by their direction, place, insertion, or situation.

*The direction* is the manner in which the leaf expands from the bottom to the top, and is either arched, upright, spreading, horizontal, reclining, or revolving backwards.

*The*



*The place* is determined by the part of the plant where it is fastened, and is either called the seed leaf from rising immediately from the seed, or radical from rising first from the root.

*The insertion* is the manner in which a leaf is fastened to a plant, and is either fastened to the disk, or has a footstalk to its base, grows from the branch without a footstalk, is fastened by a membrane, or surrounds the stalk without any part of the border adhering to it, like the Hare's-ear.

*The situation* is considered from the position of each in relation to the others. The situation is, therefore, either jointed, surrounding the stalks like stars, opposed to each other (as the Jessamine), growing in an alternate position on each side their footstalk, or without any order, clustered (as the flowers of the Sweet William), ranged like the tiles of a house, or the scales of a fish.

## 5. FLORES.---THE FLOWERS.

THE Flowers of Plants are divided into four parts: the Cup, *Calyx*; the Petal, or Flower-leaf, *Corolla*; the Stamen, *Stamina*; and the Pointal, *Pistillum*.

THE CUP OF THE FLOWER is that which incloses, and sustains the flower; and is divided into seven sorts; the *Perianthium*, *Involucrum*, *Spatha*, *Gluma*, *Amentum*, *Calyptra*, and *Volva*.

The *Perianthium* is the most common of the Flower-cup; consists often of many parts; sometimes of only one part, separated half-way into several divisions, as the India Pink; and always surrounds the bottom of the flower.

The *Involucrum* embraces many flowers collected together, and which have each of them a *Perianthium*.

The *Spatha* is a sheath, which covers one or more flowers, that are generally without a *Perianthium*; it  
consists

consists of a membrane, fastened to the stalk ; and differs in its figure and substance.

*Gluma* is a sort of chaff, which particularly covers grain and grass seeds.

The *Iulus*, or *Amentum*, is a mass of male or female flowers covered with small scales, and fastened to an axis, in the form of a rope, as the irregular flowers of the Violet.

The *Calyptra*, or *coif*, is a thin, conical, membranous cover to the parts which generate fruitage.

The *Volva*, or *purse*, is a thick covering inclosing several species of the Mushroom productions.

The **COROLLA**, Petal or flower-leaf, is one of those which form the flower, and surround the generative parts of the plant itself. Of these there are the *Petal*, and the *Nectarium*: they are either entirely one, as the *Convulvulus*, or formed of many pieces. The petal is generally distinguished by the beauty of its colour, and the nectarium by containing those sweet juices which the bees change

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change into honey. The Corolla is sometimes without a footstalk, as the Martegon.

The STAMEN is the male part of flowers, and consists of the *filament* and the summit or *anthera*, as the Passion-flower.

The *Filament* sustains the anthera, apex, or summit, and is either formed like a thread, or shaped like an awl.

The *Anthera*, *Apex*, or *Summit*, is the essential part of the stamina, and contains the male organ of generation. It consists of a little bag, of one or more cavities, containing the male farina.

The POINTAL includes the female parts of flowers, and consists of the *germ*, *style*, and *stigma*.

The *Germ* incloses and defends the seeds.

The *Style* rises from the germ, and supports the stigma.

The *Stigma* is the female organ of generation, and is situated

uated upon the top of the style, if any ; if not, it sits upon the germ.

## 6. FRUCTUS---THE FRUIT.

THE different species of fruit, such as Plums, Berries, Apples, Seeds, &c. are too well known to require a description.

## THE CLASSES.

FLOWERS are either hermaphrodite, from having both the sexual distinctions of male and female, *stamina* and *pointals* ; male, from having *stamina* only ; or female, from having only *pointals*.

The *stamina* are either detached from each other, united together by one of their parts, or joined sometimes with *pointals* : they are of equal length, or have some shorter than the rest ; and the number, proportion, and situation of the *stamina* determine the *classes*, as the differences of the *pointals* determine the *orders* of flowers.

The

The Classes, according to the number of stamina in the male parts of the flower, are called,

1. *Monandria*, one stamen.
2. *Diandria*, two stamina.
3. *Triandria*, three.
4. *Tetrandria*, four.
5. *Pentandria*, five.
6. *Hexandria*, six.
7. *Heptandria*, seven.
8. *Octandria*, eight.
9. *Enneandria*, nine.
10. *Decandria*, ten.
11. *Dodecandria*, eleven.
12. *Icosandria*, when more than twelve.
13. *Polyandria*, when more than thirteen.

Those flowers which have two stamina shorter than the rest, are called,

14. *Dynamia*, as having two long and two shorter stamina.
15. *Tetradynamia*, as having four long and two shorter stamina.

Those

Those flowers which have their stamina united together or with the pointal, are thus distinguished.

16. *Monadelphbia*, stamina united into one body.
17. *Diadelphbia*, stamina into two bodies.
18. *Polyadelphbia*, stamina into three or more bodies.
19. *Syngenesia*, the stamina forming a cylindrical body.
20. *Gynandria*, the stamina sitting upon the pointals.

Those plants of different figures are thus distinguished.

21. *Monoecea*: the plants of this class have male and female flowers upon the same individual.

22. *Dioccea*, have male and female flowers on different individuals.

23. *Polygamia*, have hermaphrodite flowers upon the same individual.

## ORDERS.



## O R D E R S.

**T**HE Orders, or Subdivisions of the Classes, are distinguished by the pointals, or female parts of the plant or flower, as the classes are by the stamina, or male parts of the flower. The number of pointals or stigmas are counted.

The chief distinctions are the number of pointals, and nature of seeds, the nature of the pods, and the number and gender of the florets. According to the number of the pointals, the orders are termed Monogynia, Digynia, &c. according to the nature of the seeds, Gymnospermia, Angiospermia; according to the pods, Siliculosa, Siliquosa; and, according to the number and gender of the florets, they are termed Polygamia *Æqualis*, Polygamia *Superflua*, &c.

A  
CONCISE HISTORY  
OF  
FLOWERS.



THIS,

## J O N Q U I L.

**T**HIS charming flower comes, with all its graces, to deck the spring: it consists of several species; but the Great Jonquil has a stem, about a foot in height, which bears, from a third part upwards, several golden blossoms, consisting of five or six leaves, all curling in a most agreeable and beautiful manner. It is multiplied by seed; but, more properly, by their bulbs. They require a good, but not a very rich soil; and are usually planted along the borders; thus affording a most agreeable embellishment to the walks and parterres of any garden meant to be distinguished for its taste and elegance.



ANEMONE.

## A N E M O N E.

**T**HIS beautiful flower, with proper culture, will blow twice a year; and thus continue to grace our gardens, when they are abandoned by all the rest of the flowering tribe. Their colours are chiefly red, blue, and purple. The root of these plants should be taken out of the ground, and preserved, like those of the *Ranunculus*. They grow best in a sandy soil, like that near Battersea in Surry, where they blow with astonishing beauty.

When the seeds crack, or shew their down, they should be gathered, to prevent their being dispersed by the wind. From these seeds, innumerable varieties may be raised: and if they are sown in February, and lightly covered with earth, they will blow the second year after sowing.



LILY.



## L I L Y.

**T**HIS flower is a great ornament to a garden. The noble height of its stem, and the simple grandeur of the flower, render it a most delightful spectacle to those who have the least taste for the beauteous productions of Nature. The Lily is too well known, and admired, to require any particular description of its form, or colour. The culture requires no curious rules, from its being easily reared in any soil: and, as if Nature meant this charming flower should be enjoyed by the poor, as well as the rich, we find it thrive with the least attention. Such is the beauty of the Lily, that many Noblemen place them in pots, in order to decorate the avenues to their sumptuous palaces.

Some

Some garden-walks are entirely bordered with them : and, indeed, wherever they are placed, they are always beautiful.

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## L A R K S P U R.

THE Larkspur is one of those flowers that seem to delight in displaying the variety of colours with which the flowers of each stem are decorated. They grow on stalks, of three feet high ; and, when choicely reared, afford, in a bed, one of the most beautiful spectacles that Flora has to present, for our delight, wonder, and contemplation. It is generally sown in February ; and may be expected to blossom, in all its richness of splendid beauty and elegance, in June and July. If properly attended, they will continue their bloom until August, or September.

DAFFODIL.





**DAFFODIL, OR LONG-NECKED NARCISSUS,**  
**WHICH** is called *Cou de Chameau*, i. e. Camel's Neck, from the long stalk, when charged with flowers, representing the neck of this animal. This flower is to be admired for its being an agreeable ornament to the rural parts of a garden. They blossom in the spring, and grow about a foot high. The Daffodil thrives best in a rich soil, with which the bulbs need only be covered: it should not be much exposed to the sun, from the flower deriving most beauty from the lateness of its appearance. The bulbs should be set about four fingers distant from each other, in order to afford sufficient room for their expansion. It should be removed every three years. They flower in March.

**COLCHICUM,**

## COLCHICUM, OR MEADOW SAFFRON,

**I**S so called from its growing in Colchis, a country in the neighbourhood of the kingdom of Pontus, famous for the fable of the Golden Apples, and the Golden Fleece; see our Mythology, Vol. I. of The Historical Pocket Library. It is said to be so strong a poison as to kill dogs, from which quality it is called Dog's-bane. Of the Meadow Saffron there is a variety of species. Its general description is, being a plant that shoots from its root five or six oblong leaves about an inch broad, smooth, and of a brownish green. Amid these leaves rises the stalk, bearing at the top a yellow single-leaved flower like a pipe, and cut into six parts. The Colchicum will grow in any soil. It is multiplied by bulbs, which are produced every year in abundance. They should be planted in pots or borders, and transplanted in July; in which state they should lie until September. They flower in March.

POLY.



## POLYANTHUS

IS divided into the Primrose and Cowslip kind; and these are subdivided again into the Single-flowering, Double-flowering, Hose in Hose, Pentaloons, and Feathers. The Single-flowering are chiefly white, yellow, red, purple, and violet-coloured. They are multiplied by seeds, sown in February, upon a place prepared with earth taken out of decayed willows; often refreshing the new-sown spot with water; and keeping it shaded from the sun, all April and May, until the young plants appear. The Primrose kinds blossom close to the ground; and the Cowslip species, about six inches higher. Both these

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these sorts may be planted near the edges of borders, and near houses, for the enjoyment of their agreeable smell. Nothing can be more delightful than a number of these Flowers, accompanied with Violets, growing under hedges, in avenues, and artificial wildernesses. They flower in April.

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### P E R S I C A R I A

**H**AS a towering stem, about five feet and a half high, resembling a Sugar-cane, which, towards the bottom, is garnished with several large green leaves, like those of Lilac. It has a garnet blossom which grows in the form of a feather, that hangs from their stems with considerable grace and beauty. They are cultivated in most gardens distinguished for their choice assemblage of elegant flowers. Their time of blossoming is during the summer months, when the parterres of those gardens in which they are cultivated, derive considerable ornament from their beautiful and singular appearance.

TULIP.



## T U L I P.

THE Tulip requires nothing but a fine scent, to render it the finest flower in the world. Their infinite varieties display such beauties as eclipse every other pride of the garden. These ornaments of Nature are as kind as they are beautiful; for they continue regaling the sight with a succession of their charms, from March to the latter end of May. They are divided into classes; the early

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and later blowers. Their varieties are chiefly distinguished by the names of cities, or such like characters. A good Tulip is known by its strong and towering stem, its beautiful colours; with a flower shaped like an egg, without sharp points to their petals: but what renders them the most valuable, is their variety.

The flower-stems, being left upon the roots, will perfect their seeds about July. The seeds are gathered when they begin to crack.



## JERUSALEM CROSS.

THIS flower is a species of the *Lychnis*; and is called by Botanists, *Flos Constantinopolitanus*, from being originally brought from *Constantinople*. This plant shoots into several stems, about two feet high; and divides itself into numerous branches. The leaves are long and pointed, of a green and brown colour. On the top of each stem grow the flowers, consisting of five leaves, which hang down, like the tops of Fennel, and represent little crosses, sometimes of a white, but more generally of a scarlet colour. They have an agreeable odour. The Jerusalem Cross will thrive in any substantial soil; but it grows best in the shade. The culture is the same as of the *Lychnis*; to which we refer our readers. It flowers in July; and is reckoned a great ornament, among any others you may please to plant it. Care should be taken to water it, in hot and dry seasons.





## N A R C I S S U S.

OF this flower there are several species; but as the *Narcissus Polyanthus* is one of the most early blossoms, we shall briefly describe it. Its scent is so sweet, that many consider it not less desirable than the *Jonquil*. This, like all the other *Narcissuses*, should be propagated from offsets, taken from their roots.

The *Polyanthus* is greatly admired for its splendor and variety of colour, in both of which it has no small resemblance to the *Auricula*. In the rural parts of our gardens,

gardens, these, as well as the Daffodil Narcissus, are a very agreeable ornament; which has caused them to be frequently mentioned by the most eminent of pastoral writers.

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## F R I T I L L A R Y

IS a plant that has a stem about a foot high, round, smooth, and of a deep-green colour. It is garnished with about six or seven leaves, placed irregularly, and which are long and narrow. At the top of the stem grow one or two flowers, hanging down in the shape of a bell: these are speckled with several colours, and are composed of six leaves. The colours, being placed in the form of a chefs-board, have caused this plant to be called the Fritillary, from *Fretillus*, which signifies a chefs-board. Fritillaries are multiplied by bulbs and seeds. The bulbs are planted in September. The bulbs should be placed three inches deep, and at the same distance from each other. They flower in April.



## JESSAMINE.

**ALTHOUGH** all the species of Jessamines grow in a very irregular form, and are never submitted to the pruning-knife, they are a beautiful ornament to any garden. Of the Jessamine, there are too many sorts to be here described; we shall therefore confine ourselves to the Common Jessamine, which is so great a decoration to the cottages of our peasants, as well as the gardens of our nobility. It is a shrub that shoots forth several small branches; which are adorned with leaves oblong, pointed, placed in pairs along each branch, which terminates with a single leaf: at the end of the branches grow the blossoms, in form of umbrellas, consisting of five delicate white leaves, which possess a most agreeable smell. When  
the

the Jessamine is in bloom, nothing can be more pleasing, than the contrast of the green ground with the starry flowers with which it is so numerously studded.

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### CARNATION.

THESE are called, by the Greeks and Romans, the White Violet, from being of the same species with respect to the flowers. The Gillyflower is reckoned one of the most principal ornaments of our gardens. The variety and great number of its flowers seem to have acquired it this distinction. The leaves of the stem resemble those of Sage: from the middle of the root, the stem rises about eighteen inches, and then runs into several branches, tufted with beautiful flowers, composed of four leaves, in the form of a cross, which have a most fragrant smell. This plant is raised from seed being sown in March, on hot-beds, in small drills drawn across each other: the seed being sown, is covered, with the hands, as lightly as possible. When the plants appear, they must be secured from the frost by glasses, matting, or dry dung. Among the Gillyflowers is ranked what is commonly called the Carnation, Old Blowers, &c.



## PASSION FLOWER.

**T**HIS flower cannot be esteemed less than a miracle, since God has thought proper to describe on it the principal emblems of the death and passion of our Saviour. The leaves are pointed, like a crown of thorns: the whiteness of the leaves represents the innocence of Christ; the red strings are emblems of his being scourged; and the little column, in the middle of the flower, is thought by Divines to be the figure of the pillar to which our Saviour was bound: another part represents the sponge; and the stamina, growing over the pillar, remind us of the three nails with which he was nailed to the cross: and, in a word, the pointed leaves raise a perfect idea of

of the spear with which his sacred side was pierced. This most curious flower grows in all sorts of ground, especially in a soil inclinable to moist rather than light: it is multiplied by roots set three inches deep. As the roots spread considerably, care should be taken to prevent their injuring the roots of other neighbouring flowers.

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### AMARANTHUS

**I**S a plant that has, rising from its root, leaves that are large, pointed, of a brownish green, bordered with red. From the centre of these leaves grows a stem about eighteen inches high, of a red colour, bearing flowers either of a violet, purple, crimson, orange, red, or scarlet colour. From the beauty and simplicity of these colours, the Amaranthus is always esteemed as a most valuable appendage to a garden. The seed, which is remarkably small, curious, and beautiful, is preserved in little boxes until the winter. These flowers appear graceful in pots filled with kitchen-garden earth and bed mould. If

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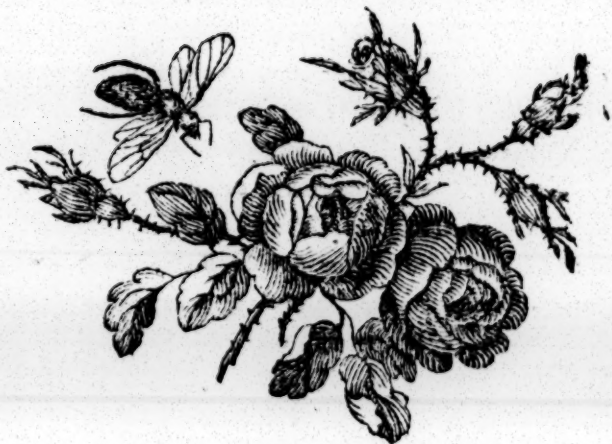
watered

watered constantly and carefully, they will grow, in this state, to a fine size, and will make a most beautiful appearance: and, as the flowers continue a considerable time, and flourish when other flowers are scarce, the *Amaranthus* is considered as no inconsiderable part of an elegant garden.



ROSE.





## R O S E.

**ALTHOUGH** Roses are generally ranked among flowering shrubs, yet, as they are reckoned the greatest ornaments of an English garden, and are the chief beauty of any assemblage of flowers, we should think ourselves remiss, in omitting a brief account of them, in this short Description of Flowers.

As a general description of the many sorts of Roses,--- they grow on shrubs, that shoot forth hard, woody, thorny branches ; with oblong leaves, indented, and armed with prickles. On these branches grow the flowers, consisting of leaves, in a round form ; their cups are leafy, and turn to round, or oblong, pulpy berries. The Pale Rose is fair, large, of a carnation colour, and possesses an agreeable smell and appearance. The Damask Rose is a small, white, single or double Rose, with a musky scent. The Common White Rose is large and beautiful ; and remarkable for being, with the Red Rose, worn as the distinction of the Houses of York and Lancaster. The Yellow Rose has broad leaves, of a lemon colour, without smell. The Monthly Rose is like the Damask, and has red flowers, growing in bunches. The Striped Rose has white and red streaked leaves : and the Moss Rose is so called, from the stem and outward leaves appearing to be covered with moss, in a manner that appears singularly beautiful.

RANUN.

## R A N U N C U L U S.

THE Ranunculus, next to the Tulip, is desirable for its beauty. There are several sorts of them imported every year from Turkey. This plant blooms in April and May, upon stalks about six or eight inches high. The double-flowering sorts are crowded with petals, like the Province Rose flower. The colours of them are deep scarlet, veined with green and golden hues, yellow tipped with red, white spotted with red, orange colours, plain white, yellow with black, and one sort of a peach-bloom colour. The single Ranunculus blows somewhat taller than the double, and is most agreeably variegated with pleasant colours. They are both increased by offsets, found about the roots, after taken from the ground. They may likewise be propagated from seed, saved from the single blossoms. But we are indebted greatly to the French for them, in consequence of our climate being too cold for their culture.



## D A I S Y.

**T**HE Daisy, being of an agreeable aspect, was called by the Romans, *Bellis*, from *Bellus*, i. e. handsome. The Daisy has small, oblong, smooth leaves, both indented, and otherwise : in the middle of these leaves rise little, long stalks, tufted with a radiated flower, which is sometimes white, red, and variegated.

The Daisy, for its simplicity of beauty, and being the early grace of our banks and meadows, has been ever, and justly, one of the most charming subjects of pastoral poetry. To gather them, is the first pleasure of lisping infancy ; and to view them, is the first delight of the humble cottager. Although this plant produces seed,  
yet

yet those who cultivate them in their gardens, replant the split roots. It grows very low; and is a most proper and beautiful border, either in the flower or kitchen garden.

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## TUBEROSE.

**I**S a sort of Hyacinth, called *Hyacinthus Indicus*. Although this plant is brought from such a distance as Asia, yet it is now plentiful in most parts of Europe. The Tuberoſe has, growing from its roots, ſeveral leaves, about ſix inches long, ſtrait, and pointed at the end. In the middle grows a ſtem, to the height of three or four feet, and about half an inch in diameter. On the top of the ſtem grow the flowers, like Lilies, ſingle-leafed, ſhaped like a pipe, indented, and looking like a bell. The flowers blow ſucceſſively, which cauſes the Tuberoſe to continue long in bloſſom. So ſweet is their odour, that they perfume the place wherein they are ſet. This plant, if ſet in May, will flower in Autumn. They ſhould be placed where the ſun is hotteſt. They will be found a greater ornament to windows than to parterres.



## S N O W D R O P.

ONE of the first offerings which Flora displays on the shrine of Nature, is the Snowdrop. Pallid like the cheek of Spring, are its leaves; and, like the season in which it appears, its blossom hangs languid on the verdant stem. The flower is composed of six leaves, which together form a blossom, similar in shape to a bell: the odour is as grateful as the colour is delicate. The Snowdrop, being a bulbous plant, is raised from its root, and is generally ranged with the Narcissus. Although it is a common flower, yet such is its beauty, simplicity, and cheering appearance, that it generally accompanies the Crocus in all parterres distinguished for their variety or their elegance.

SWEET.

## SWEET-WILLIAM.

**T**HERE are two sorts of this plant, consisting of single and double flowers. The single sort only differs in the colour of the flower: the one has branches of blossoms variegated with red and white; the other has clusters of deep crimson-coloured flowers. They both blossom in June and July, upon stalks two feet high. The double sort produces its beautiful red flowers in the same months, but upon shorter stems. The single-flowered Sweet-William may be raised from seeds sown in March: they will blossom the second year. The double sort is propagated from slips taken from the root in March or April: if planted in a loamy soil, they will thrive the best. The others may be also increased by the same means, or if they are laid down in the earth like Carnation layers.



## CYCLAMEN.





## CYCLAMEN.

THE Cyclamen is so called in Latin, French, and English, from the root being almost round. It is a plant that produces from the root, leaves that are broad, almost round, of a dark green colour, speckled on the outside, and with purple on the inside: in the middle grow long pedicles, and at the top of which are the single-leaved flowers, dividing into five parts, folding inwards. Autumnal Cyclamens bear a red flower, sweetly scented.

In

In this season, blows one called the Constantinople Cyclamen, which bears the first year twenty flowers; the second, fifty; and the third, two hundred: and all without the least smell. The Cyclamen is raised by seeds. The Autumn Cyclamen should be sown in Autumn, and the Spring Cyclamen in the Spring.

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## SCARLET LYCHNIS.

THE beauty of this plant is such, as to cause it to be ranked among the most elegant parterres. Both the Single and Double Lychnis are very delightful in appearance: they bear bunches of scarlet flowers, upon stalks above two feet high, in June and July. They are so greatly esteemed, that gardeners rear them in pots, to decorate the most beautiful parts of their garden, or to be placed, in the Summer season, in chimnies, where they prove a most pleasant ornament. The double kind is increased by slips taken from the root in March. The single flowering kind may be propagated by the same means, or raised in March from seeds, which blossom the first year. An open situation, and a light soil, are most proper for their cultivation.

CROCUS .



C R O C U S.

**T**HIS early flower, as if anxious to share with the Snowdrop in cheering the departing gloom of Winter, appears in January and February, but not to be a mere spectacle of beauty: it produces a most useful substance, which is saffron. The shape of the flower resembles the Lily, and possesses an agreeable scent. Considering its cheerful aspect, when few flowers appear, and its producing so valuable an essence, it is rather a wonder it should not be more cultivated in our gardens. The true Crocus is rather to be multiplied by the root than by its seed. It requires a rich soil, and ought to be planted in a ground exposed to the fostering rays of the sun.

**COLUMBINE.**

## COLUMBINE.

THIS plant is called *Aquilegia*, from *Aquila*, an Eagle, in consequence of the leaves of its flower being hooked like the beak and talons of that bird. The Columbine shoots indented leaves of a blueish green, and growing to long stalks. In the middle, rises a stem of eighteen inches long, which is slender, and of a reddish colour: from this stem sprout several little sprigs, which support a flower composed of five flat and five hollow leaves, coloured with red, blue, white, chefnut, and carnation. Columbines require a rich soil, and are cultivated by sowing the seed very thinly in September, in beds well dug, where it remains until the plants are ready to be removed to the plots of a parterre. The Columbine is one of those lasting plants which is kept alive by its roots, and will live a long time in the earth without requiring to be sown again.

DOUBLE



## DOUBLE MARYGOLD.

THIS plant has been admitted into our gardens, from the richness of the colour, and the beautiful form of the numerous leaves. Nothing can be more splendid than their golden hue. With respect to the disposition of the leaves, they seem as if Flora had particularly disposed them into the form of a crown, for her own embellishment. The leaves are not only beautiful in themselves, but they are allowed, by physicians and botanists, to possess great medicinal virtues : they are said to cheer the spirits, by their infusion, as much as they cheer the sight by their appearance. Their flavour is likewise so agreeable,

ble, as to have caused it to be mixed among the herbs that are usually boiled in our broths and soups. Thus, after delighting us in the parterre, they heighten the delicacies of our tables.

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### B E L V I D E R E.

FROM the leaves of this plant, resembling those of Flax, it is called in Latin, *Linaria*, from *Linus*, which signifies Flax. It rises into several stems, two, three, or four feet high; and shoots into many branches, garnished with strait, oblong leaves, of a light-green colour. At the extremities of these boughs appear single flowers, with irregular leaves. These plants are of use in little courts, where they are set two feet distant from each other, in borders raised for the purpose; or in pots, placed in symmetrical order. The Belvidere is multiplied by seed, sown in plain ground, in any part of a nursery; from whence it is removed, as soon as it is strong enough to be replanted. As the air injures the root, it should be replanted the moment it is taken from its native soil, and watered immediately.

PRIMROSE.



## P R I M R O S E.

**T**HIS flower very early graces the lap of Nature. Its golden leaves are frequently seen rising from the snowy beds. So welcome is this flower to man, that it is frequently reared in pots; which are placed to adorn our windows, when scarcely any other verdure is to be seen abroad. When planted, it should be placed in good garden mould, and in a warm situation, among the smallest flowers, or else to edge the compartments of our parterres with its golden tissues. As no flower is more cheering, or agreeable to the sight, we find it generally grace our most choice and beautiful gardens.

FLOWER



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### FLOWER OF PARNASSUS.

**T**HIS plant is called Parnassia, or Gramen Parnassi, by the Botanists, from its being found on the Mountain of Parnassus. It bears leaves very like those of the Violet; from amidst these leaves rise several stems, about six inches high: on the top is a rosy flower, composed of several unequal leaves, fringed, and disposed in a circle. This plant is annual, and consequently multiplied by seed, which should not be thrown too thick. It thrives best in a fat, moist earth; and is cultivated like those other plants that are sown in hot-beds in March, and which are consequently to be secured from the cold by glasses, straw, or matting. This flower is not only a great beauty in parterres, but in pots, or very large tubs, where it appears to equal advantage.



WALL-



## WALLFLOWER

**I**S called by some, the Yellow Gillyflower. It consists of both single and double flowering kinds. It shoots out leaves of a dark green colour, that are pointed at the end: between these leaves, grow several branchy stalks; on the top of which appear the flowers, composed of four, and sometimes more leaves, of a yellow colour. The single Wallflower is multiplied by seed, and the double by layers or slips.

This

This flower will grow every where ; even upon walls, or among rubbish : but, when cultivated, more care should be taken of them, as they will prove an agreeable ornament to borders, or any other parts of a garden not destined for more choice flowers.

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### BLUE BELL.

THE Blue Bell plant shoots forth stalks two feet and a half high, which are hairy, and furnished with leaves : these are oblong, broad, and pointed at the end, notched at the edges, and downy : along these stalks, and at the stems of the leaves, the flowers grow, in form of bells : these blossoms are blue, notched at the brims, and divided into four parts ; each is supported by a calyx, or little cup, divided likewise into five parts. This flower delights much in the soil of a kitchen garden. It is multiplied by sowing the seed, as thinly as possible, on the end of a plot well dug, and smoothed on the surface. The time of sowing is September and October, and that of flowering is July.

LILY



## LILY OF THE VALLEY.

**M**ANY are surprised that this plant should be called a Lily, as the blossom has not the least resemblance to that flower. Of this plant there are two sorts; the white and the large-leaved Lily. The first has a stem a foot high, bearing three long, large, smooth, green leaves: the stem, from the middle upwards, is adorned with flowers almost round, white, very fragrant, and fastened to a small sprig. The second only differs from the first in having red flowers inclining to white, and not having so agreeable a scent. The Lily of the Valley is only multiplied by slips taken from the plant and roots. This plant, first arising in a valley, thrives no where so well as in shady places; for which reason, it is never set in the walks, but in some private part of the garden, where it is reared for the sake of its flowers.

SUN-



## SUNFLOWER.

THIS plant is called *Torn-Sol* by the Italians, which signifies turning towards the sun: it is therefore called *Turnsole* by several of our Botanists. The cause of its turning towards the sun, is from the flower being heavy, and consequently inclining the stem to that position it is liable to, from being warped by the rays of this luminary.

The Sunflowers are of two sorts: one produces a stem between five and six feet high, which is very strait and branchless, with leaves nearly as large as those of the Vine, jagged, pointed, and rough: on the top of this stem

stem appear the flowers, resembling the sun. Care should be taken in what part of a garden it is planted, lest it should choke the flowers growing near it. The places most proper, are the broad allies planted with trees, and between which the Turn-sol may be planted at three feet distance.





## I N D I A N   P I N K .

**ALTHOUGH** this plant has a strong smell, yet it is raised in our gardens, for its beautiful flower. The Indian Pink shoots into a stem, about eighteen inches high, and then divides into several branches, full of leaves, indented and pointed. At the extremity of each bough, appear radiated flowers, round, composed of several well-formed leaves, which are of a yellow colour. The disk consists of several flourishes, divided into many parts. These flowers have likewise crowns, composed of half-flourishes, placed in a cup, of one leaf. The Indian Pink requires much the same management as the female Balsam Apple. The cold injures them very materially.

This



This plant is very proper in all the compartments of our parterres : but they should not be placed among plants of the smaller size, nor in the middle of beds ; for, by such a situation, the great beauty of these Pinks would be lost to the spectator.



LUPINE.

## L U P I N E.

**LUPINES** consist of three sorts ; the Great Blue, the Small Blue, and Yellow Flowering species. They all blossom in May and June. The first sort grows to about two feet high ; and the two latter, about half the height of the former. They are a flower that is seen in most gardens ; and are remarkable for their neatness of blossom, and simplicity of colouring. The yellow species possesses an agreeable scent, which is denied to the other sorts, that however are recompensed, in general, with a greater brilliancy of colouring.





## C O N V O L V U L U S.

**T**HIS plant consists of three species, called the Major, Minor, and the Scarlet Flowering kind. The Major has a flower of a rich purple colour ; the Minor displays a flower of a delicate hue, between a sky and mazarine blue : this species is sometimes variegated with the colours of yellow and white. The Scarlet-flowering kind

is

is distinguished for bearing a flower, of the colour from which it derives its name. But that which most particularly characterises the *Convolvulus*, in all its three species, is the flower, consisting of a single leaf, which is a remarkable instance of the variety Nature displays in every part of the Creation, when contrasted with the *Ranunculus*, and other flowers, that are composed of such a multitude of leaves. The *Convolvulus* blows from June until August; and, as a picture of humility, creeps upon the ground.

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## A S P H O D E L.

THIS plant, from its appearance while blooming, being similar to a royal spear, is called in Latin, *Asphodela Regia*, i. e. King's Spear. The stem of the *Asphodel* is three feet high. In the middle of it grow, up to the top, a great number of single flowers, each divided into five parts. It thrives in every sort of soil; is multiplied more by roots than seed; and, if well watered, will afford

most beautiful flowers. The Asphodel is considered as a great ornament to a border, or any other part of a garden, where dwarfs, or tall flowers, are raised. It should be set three inches deep, and a span distance from each other, or from whatever flowers may be in the same compartments.





## FOXGLOVE

IS a large flower, resembling a thimble worn on the finger: from the root grows a stalk, two, and sometimes three feet high; and is hairy, and of a reddish colour: the leaves are oblong, and pointed at the end; covered with a little hair; indented on the edges: the outside is a brownish green, and the inside of a silvery white. On one side of the chief stem sprout several footstalks, which support single flowers that are wide at top, and are cut

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into

into two lines: their colour is generally purple, although they have sometimes a mixture of hues. In the middle of the cup is a chive, which adheres to the hind part of the flower. A light soil agrees best with this plant. The seed being very small, should be thinly sown in September. Fox-gloves flower in June. Being tall plants, they are only adapted for the borders of beds, where the larger species of flowers are set or planted.

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#### HEART'S-EASE.

**T**HIS flower, by the Latins, is called *Viola Tricolor*, from being adorned with three colours. It bears stems which have a tendency to creep along the ground; and are full of leaves, and rather oblong: the stems branch into boughs; at the top of which grow the flowers, which are placed under the species of Violets, composed of five leaves, from bearing a cup divided into five parts: each flower is white, blue, and yellow-coloured. It is multiplied by seed sown in beds as thinly as possible.

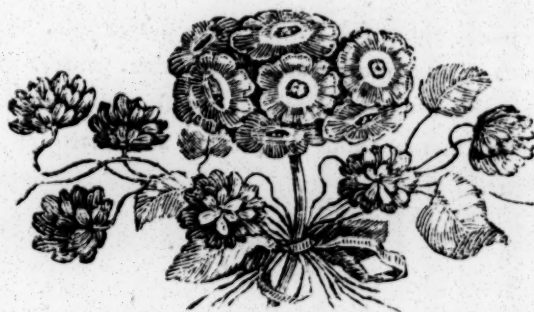
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When sufficiently raised, it is removed into pots, where it makes a more agreeable appearance than it does in its native humble situation, where it is lost and overlooked, like modest merit, amid its greater and more splendid neighbours.





## AURICULA.

**T**HIS flower has been the greatest pride of all gardeners. One root of it has sold for twenty guineas. These flowers are indeed very delightful, both in scent and beauty. They blossom in April, and are in full bloom about the 20th of the same month. The numerous variety of their flowers, are distinguished by the names and titles of eminent and exalted characters: thus, it has been not unaptly observed, that, as Auriculas increased so fast, and great men, if possible, decreased faster, in a short time names of distinction would be wanting to denote their differences. The goodness of an Auricula consists in a strong flower-stem, short footstalks,  
large

large regular flowers, full, round, and white eyes; and that the flowers themselves may be flat, not the least inclining to cup.

The culture being particular, we refer our readers to Bradley's New Improvements in Gardening and Planting.

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## V I O L E T.

THE Violet produces, from its root, tufts of leaves almost round, indented on the edges, and of a beautiful green. In the middle of these leaves grow the flowers, consisting of several irregular lips, shaped like a butterfly: the two uppermost resemble a stand; and those on the side are like wings; and the two lowermost are formed like a little bark. Thus curiously formed, it has been equally the pride of the peasant, prince, and poet. It is one of the most early beauties with which Flora presents reviving nature. It grows in any sort of ground, and is particularly

particularly pleasing upon the borders of small gardens. The flower is as agreeable to the smell as to the sight, which has caused it to have been so universal a favourite. It should be replanted every three years, and kept from weeds, which is the chief trouble the culture of the Violet requires. The Double Violet is only that which is raised in our gardens.



PINK.



## P I N K.

**T**HIS plant shoots long, strait, thick, hard leaves, of a blueish green. In the middle rises the stem, long, round, and jointed at a certain distance: on the top of this the flowers grow, consisting of several variegated leaves, supported by a hollow membraneous cup. Such is reckoned the beauty of this flower, that it has been the first study of the most eminent gardeners, to raise them in the greatest perfection. Volumes have been written on their cultivation;

cultivation; and, as the flower is so well known, we shall only add, that Pinks are set indifferently, either in open ground, upon beds, in earthen pots, or in tubs, in Autumn, or the month of March. They are one of the chief ornaments of all gardens; and are remarkable for the variety, beauty, and excellence of the flowers.

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#### AUSTRIAN ROSE.

**T**HIS plant has, like other Roses, a prickly stalk, which is garnished with winged leaves of an oval form, and their lobes sawed. The flower consists of petals that are indented at the top, and which have one side red and the other yellow. It being a shrub, it may be propagated from the suckers that grow from the root, or from the offsets, either in Spring or Autumn. It blossoms during the months of July and August. Although this flower is much cultivated, yet Miller observes, that it is only an accidental variety of the Rose considered as a genus. Among the many species of Roses, this is cultivated as one of the most valuable embellishments of a shrubbery.

HELLEBORE



## HELLEBORE

**GROWS** wild in Italy, Austria, and Lombardy. It thrives best on high situations. It has a plain stalk, ungarnished with leaves, until it produces the blossom on its summit: the flower is yellow, and composed of five or more petals. The root is fibrous. This plant should be propagated by offsets, and the roots should be taken out of the ground, and transplanted. When their leaves decay, which is generally from the beginning of June to October,



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October, the roots should be planted in small clusters, in order to improve the appearance of their blossoms. If planted alternately with Snowdrops, their effect will be the more agreeable, as they flower about the same time.

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### I R I S.

THE Bulbous Iris shoots forth a stem formed of long, broad leaves, that are soft, and of a pale green colour. In the middle grows a stalk which bears, on its top, a single-leaved flower divided into six parts; and, in the centre of the flower, is a chive of three leaves arched. Their flowers are either white, yellow, blue, red, or ashy colour, and are most beautiful in appearance. They are multiplied both by their seed, and by bulbs. When the seed is to be sown, it should be gathered in July, and preserved until September, before it is committed to the soil; and whatever colour the seed is, you may expect to have a flower arise from it of the same hue, which is a circumstance peculiar to the Iris, and may account for its name, which is derived from a Greek word signifying to foretell or presage; for the seed thus foretells the colour of the flower.

NASTURTIIUM.



## N A S T U R T I U M.

THE NASTURTIIUM INDICUM, or Indian Cresses, are of two sorts; one large, and the other small. The large sort is known by the name of Monk's Hood: it has flowers, variegated with yellow and scarlet: they run upon the ground, and blow from May to September. This plant is raised with little care. The seed, being large, is sown in separate grains, at four inches distant from each other. The flowers of Monk's Hood grow upon small reddish stalks, and are composed of several irregular leaves. The stem is covered with leaves; which are sometimes round, and sometimes angular. The small sort of Nasturtium is frequently eaten as a pickle; but the larger, which is Monk's Hood, is considered as poisonous.

HOLY-

## H O L Y H O C K S

CONSIST of several sorts. They have a large stem, that rises about six feet high ; which is decorated with flowers, in the same manner as other flower plants are decorated with leaves. The flower blends the delicacy of the Poppy with the richness of the Rose. The colours of these flowers are various ; as the red, white, purple, and black. Although the stems of the Holyhock are so strong and large as to grow six feet high, yet they wither every winter to the ground. Their seeds are sown in March, in the natural earth ; and, notwithstanding they lie not long in the ground, they produce no flowers until the next year. They may be transplanted about March, or September. The time of flowering is in July and August.



CROWN



## CROWN IMPERIAL.

**T**HIS plant has a stem about two feet high, which is surrounded with long, pointed leaves, growing immediately from the root: the stem is likewise garnished with small leaves, growing in pairs, without any footstalk. Upon the top of the stem is the flower, composed of several green, upright leaves, that appear to grow from the germ of another flower, formed of yellow inverted leaves, in a figure somewhat resembling a turban: amid these leaves are seen stamina, with white anthera, which hang down in a graceful manner. The anthera resemble dew-drops, falling from the filaments of the stamina. The Crown Imperial is propagated from its bulbs, which should be taken out of their mould in June,

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well

well cleaned, and carefully stored till September ; when they should be replanted. It blossoms chiefly in March and April : during these months, its singular beauty, and graceful dignity, form one of the chief ornaments of our most elegant gardens.

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### H Y A C I N T H.

**N**EXT to these follows the Hyacinth, with all its virgin beauties : there are so many sorts of them, and so different in colour, that Nature seems to have taken pleasure in forming, and rendering them the more admirable by variety. As we are noticing the more early flowers, we have to observe, that the winter and spring Hyacinth is blue, and odoriferous. It is little, round, and of a single colour. Hyacinths, like many other flowers, are multiplied by seed. The bulbs that are produced from the seeds, bear no flowers until the fourth year. The greatest part of Hyacinths delight in places that are mostly exposed to the sun, and apart from other flowers. Like animals that herd together in flocks, Hyacinths are, by Nature, most adapted to grow in clusters, by themselves.

MAR-



## MARTAGON.

**T**HE Martagon, or Mountain Lily, consists of several sorts. The Great Martagon has a red flower, growing on a stem between two and three feet high, without any footstalk. It is smooth to the touch, and of a deep green: the flower is crooked, and bends down at the end of the stalk, which supports it from falling. The plant may be set in any soil. It must be planted a span deep in the earth, and at the same distance from any other flowers which it accompanies. It is set among flowers of the larger size, or rather in the middle of borders, with flowers smaller than itself. The Martagon blooms in May. The bulbs should not be removed before you

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intend

intend to transplant them. Being sooner affected with heat than cold, the bulbs should be sheltered from the sun with little layers of earth, or preserved from the summer heat by frequent waterings.

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## S W E E T   P E A.

**T**HIS plant is frequently introduced into gardens from the sweetness of its scent, and the delicate beauty of its flowers. It is generally set with another, called the Painted Lady. The flower of the Sweet Pea is exactly the same as the common Pea blossom, except being purple instead of white. The flower of the Painted Lady is pink and white. They are both raised from seed, which is sown about the time of the other Peas. They blossom mostly in July, and are no little decoration to those parts of a garden allotted for the irregular and beautiful simplicities of Nature.

POPPY.





## P O P P Y.

**T**HE Garden Poppy has a stalk about two feet high, which supports a flower distinguished for its delicate texture, beauty, and variety of colour, and its somniferous odour: but although the flowers are so agreeable in appearance, they are of short continuance. They should be sown in spots, in order to afford an assemblage of colours, their variety of hue is so well calculated to afford. This flower is said to yield a substance which is generally sold by our Apothecaries as opium. The Dutch Wild Poppy does not blow so high as the former: the flowers are red and white striped, and bloom during the months of June, July, and August.

MEZEREON.

## M E Z E R E O N .

**T**HIS plant is of two sorts; the Red and White flowering. The Red is very common in gardens; but the White Mezezon is rather scarce. They are both dwarfs, and seldom rise higher than about three feet: their stalks are ornamented with flowers so early as January, when the air is perfumed with their agreeable odours. They remain a long time in blossom, and are afterwards much adorned with the beauty of their fruitage. The only mode of propagating them, is by sowing their seeds in March. This plant may be profitably introduced into parterres, as a show flower, or in wilderness works, for its delightful blossoms. But they are adapted chiefly for a winter garden.

HONEY-



## HONEY SUCKLE

IS a shrub, which shoots forth several branches, that expand on every side, and support themselves by twining round whatever is within their reach. At the knots of the branches, the leaves grow in pairs, opposite each other, at equal distances: they are soft, broad, pointed, green without, and white within. At the end of the branches the flowers grow, in form of pipes, bending in a manner somewhat similar to a crown. The peculiar form of the leaf, an agreeable diversity of colour, and the aromatic odour it dispenses around the gardens it decorates, render the Honeysuckle one of the most desirable appendages to every spot where the bounties of Flora are collected for human delight.

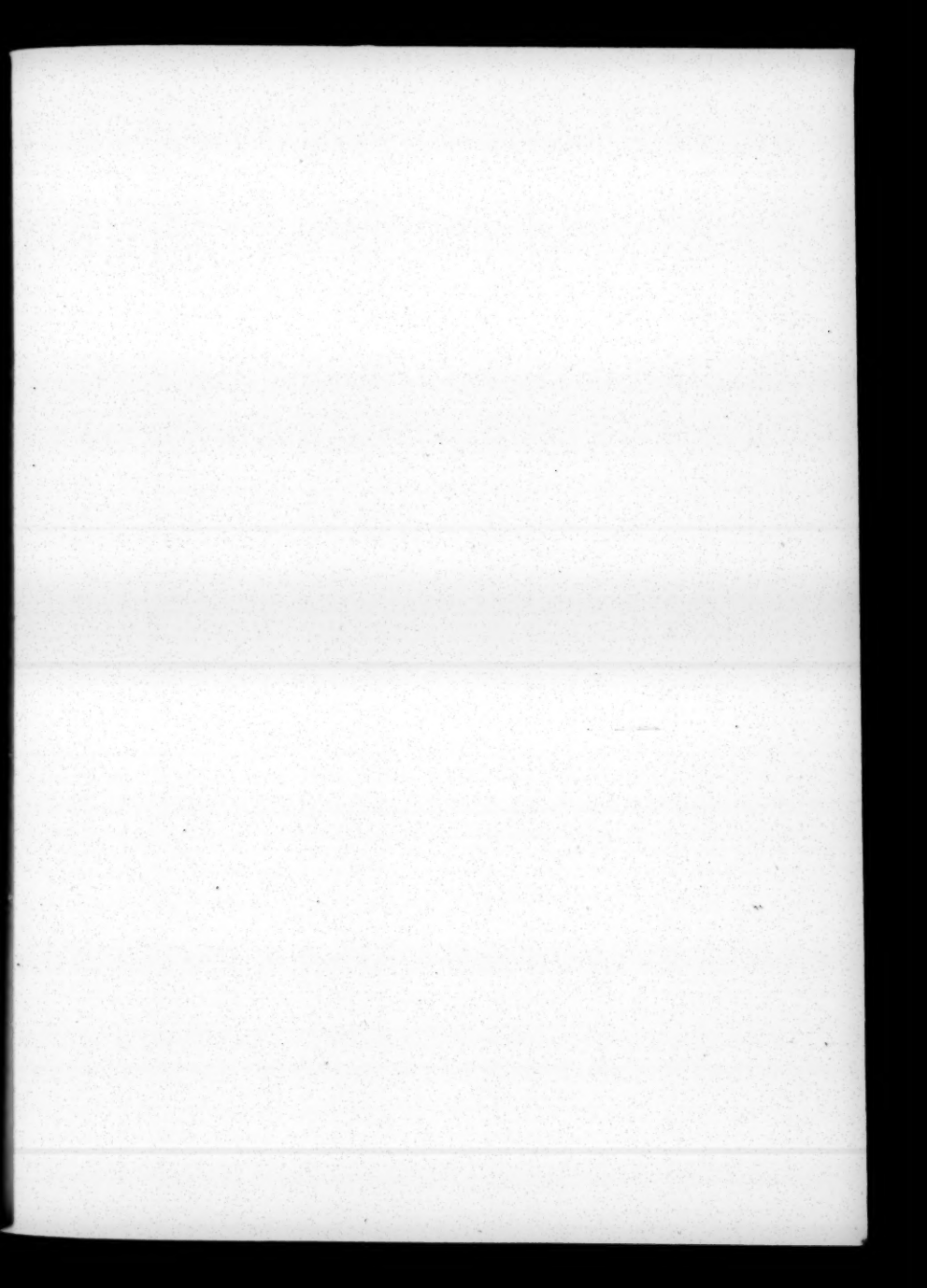
ST.

## ST. JOHN'S WORT

**G**ROWS on a thin, leafy stalk, about a foot high. From the chief stem grow many branches, which are garnished with long, small, pointed, and plain-edged leaves. On the top of each of the smaller branches, is a yellow flower, which greatly resembles the Daisy, both in size and form. If reared in a green-house, this plant will blossom in March: but, if cultivated in a garden, the usual time of flowering is in June; when it may be gathered for medicinal purposes. St. John's Wort is reared in most physic gardens, from its possessing qualities that greatly assist the cure of the jaundice: it is likewise a chief ingredient in that valuable balsam so well known by the name of Friar's Balsam, or Turlington's Drops.

THE END.









Eternal Union with Christ 43  
which page is illustrated by Dr  
Gill, in the 1<sup>st</sup> Vol: of his miscell.  
p: Xviij. & XIX. & 2<sup>d</sup> Vol: D<sup>o</sup>. 185

Conditional salvation refuted. 279

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Attendance on ordinances, not Essen-  
tial to Salvation = 163 = A.



N: B. The Doctrines of the  
Trinity, nor of the Person of  
Christ, are meddled with, in  
either of the Vol's. Pref: p: ~~XXI~~.

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